TEXTILE TECHNOLOGY DIGEST

VOLUME 7 MARCH 1950 NUMBER 3

Abstracts

(An explanation of the classification used in the Digest was published in the January (1949) issue (Vol. 6, No. 1) on the page facing the Index to Authors)

[170]

[171]

FIBERS A

Natural fibers A 1

Microstructure of the wool fiber. Joel Lindberg. *Textil och Konfektion 6,* 6-7, 20 (Apr. 1949); *in Swedish.*

A brief survey of the fine histology of wool fibers is given, with special reference to the structure of the cuticle. The properties of the epicuticle are discussed, and its importance for the conventional estimation of damage of wool fibers is shown. If the epicuticle is removed or otherwise destroyed, 3 main characters of the fiber are changed. The friction, the wettability, and the rate of diffusion for dyestuffs are considerably increased. The increase of friction changes the felting and spinning properties of the fibers. Some practical aspects of the dyeing and scouring properties of wool with reference to the epicuticle are discussed.

Processing development aids Australia's textile and tanning industries. Justin Arthur. *Indian Textile J. 60,* 134-35 (Nov. 1949).

Four specific products adapted to the modern processing of wool textiles, skins, and hides are discussed. These 4 products are a degreaser, wetting agent, solvent, and skin and hide wetter respectively. They are all essentially neutral and non-ionic. Extended use by a number of Australian firms has shown that these products are well suited for the purpose intended.

Production of fibers. J. J. Zeehuisen. Australian P. 135 726, Nov. 14, 1946.

A process for the production of spinning fibers from vegetable materials in which the greater part of the non-fibrous woody substances is removed from the fiber material by mechanical treatment such as scutching. The material is subjected to a chemical treatment especially with alkaline lye, such as solution of sodium hydroxide, for the further removal of woody substances, the fibers so obtained are then subjected to an extraction with an organic solvent, after the removal of the chemical agents and the solvent then is removed from the fibers.

What is wool?; the physical structure of the wool fiber. W. R. Lang. *Textile J. Australia 24,* 830-32 (Nov. 1949).

The nature and physical properties of wool are discussed. The term wool can refer to any of the following: 1) Non-medullated continuous growth; 2) medullated continuous growth; 3) medullated fibers shed at intervals (humps); 4) part medullated and part non-medullated fibers. In addition the wool follicle, where the fiber originates, and the fiber layers are discussed in detail.

Wool and the man-made fibers. R. G. Lund. *Textile Mercury & Argus 122,* 137, 139-40 (Jan. 27, 1950).

Wool has desirable properties which are not duplicated by any of the man-made fibers. On the other hand, new blending techniques are being developed to take advantage of the desirable properties of both wool and synthetics and thereby produce yarns and fabrics of lighter weight and superior strength. Resin application to wool also bears promise of enhancing its properties, thus widening its uses. According to a process recently developed in Holland, wool is treated with resorcinol and formaldehyde which together form a synthetic resin of a special kind. When the substances were used to treat wool under carefully-controlled conditions it was found that the fiber acquired a greatly enhanced resistance to destruction by acids.

Artificial fibers A 2

Preparation of fibers from carboxymethylcellulose. John D. Reid & Geo. C. Daul (to U. S. of Am.).

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USP 2 495 767, Jan. 31, 1950.

Fibers may be produced by extruding solutions of a soluble salt of carboxymethylcellulose into precipitating solutions such as copper sulfate, aluminum sulfate, lead acetate, stannous chloride, or mixtures of such solutions, containing polyvalent metal ions which form insoluble salts with carboxymethyicellulose. The new fibers have a number of useful properties. The metals therein lend resistance to deleterious action of microorganisms and favorably affect the rotproofness. The colors of the fibers are fadeproof. Copper imparts a blue color; iron, a red color; chromates, a yellow color.

Processing staple rayon on cotton machinery. Berthold Kirschner. *Textil-Praxis 4,* 355-57 (Aug. 1949); *in German.*

The processing of rayon staple on cotton machinery is described under the following headings: mixing, cleaning, lap uniformity, carding, drafting flyer-frames, and ring spinning. Temperature and humidity control are considered. A procedure and data for setting the machines are presented. Points of particular interest in rayon staple spinning on cotton machinery are noted. The alternate spinning of cotton and rayon staple on the same machines is not recommended. Practical suggestions are given for the maintenance of machinery.

Regenerated keratin fibers from wool. F. Happey & R. L. Wormell. *J. Textile Inst. 40,* T855-69 (Dec. 1949).

A description is given of methods of dispersion of wool and its extrusion into continuous filament yarn with a β keratin structure. The soluble protein curd is made by extraction with sodium sulfide. This product is precipitated, redissolved and refined in cuprammonium solution and then reprecipitated. A final solution of approximately 35% concentration is made from the wet curd with either ammonia or cuprammonium and after filtration the yarn is spun into a salt bath and prehardened. The yarn is then stretched and hardened in 2 stages; the final product has a tenacity of about 1 g per denier and an extension of approximately 30%. Load/extension curves and x-ray photographs were obtained during the various stages of manufacture in order to ascertain the influence of the various processes on fiber characteristics.

Structure of textile fibers. X. Structure of cellulose acetate. D. L. Wilson. *J. Textile Inst. 40,* P1070-76 (Dec. 1949).

The chemical structure of cellulose acetate is discussed as are acetylation, hydrolysis and hydrogen bonding. Also considered are spinning, the fine structure of cellulose acetate and delustering.

Synthetic composition and product having molecularly oriented structure. Gaetano F. D'Alelio (to Canadian Gen. Electric Co., Ltd.). Can. P. 449 790, July 13, 1948.

A molecularly oriented fiber showing a characteristic crystalline x-ray diffraction pattern which comprises a cold-drawn copolymer of (1) acrylonitrile, (2) ethyl acrylate and (3) ethyl methacrylate, the acrylonitrile being present in the proportion of 40% to 80% and the ethyl esters of the acrylic acids being present in total proportion of 20% to 60%, the sum of (1), (2) and (3) in the copolymer being equal to 100%.

Systematic study of the production of drawn filaments. le C. Pinte & J. Henno. *Bull. de l'Institut Textile,* No. 15, 9-41 (Dec. 1949); *in French.*

The effect of moistening on rayon yarns which have undergone drafts of variable extent and diverse character after spinning are studied. Deformation is obtained either by the application of a load or by fixing the fiber in a given condition of draft. The influence of the condition of the fiber as to moisture has been studied.

Vicara—its progress of development in the blends. John H. Karrh. *Rayon & Syn. Tex. 31,* 65-6 (Feb. 1950).

The properties of Vicara are reviewed. A table is given of Vicara blends with other fibers showing percentages of fibers used and each blend is characterized by a brief description of its characteristics.

YARN PRODUCTION B

Causes of neps in Indian cotton yarns.—II. A. N. Gulati. *Indian Textile J. 60,* 140-52 (Nov. 1949).

In this, the second of 2 articles, the author continues to discuss further the basic causes of nep formation. A detailed analysis of over 4000 neps revealed the following causes of neps in Indian cottons: 1) About 77% of neps are formed of fiber, and the rest from foreign matter; 2) nep forming fibers are short and are caused by breakage of longer fibers and by immature fibers; 3) the best measure of neppiness is indicated by neps per gram which in turn correlates with the immature component of long fibers; 4) carding does not increase neps but concentrates a few of them for elimination as waste. A cotton for spinning nep-

free yarns should have the following qualities: low immaturity, no kinked, spurred or branching fibers, no damaged seeds; cotton should be clean, it should be dry, and have no fungal growth.

Short processing in fine cotton spinning. T. Ross. *J. Textile Inst. 40,* P1061-69 (Dec. 1949).

The advantages gained by the use of equipment such as 2-zone drafters to achieve economy in labor, abolishment of redundant processes and improvement in machines are discussed. Graphic comparisons are made of the long and short methods of processing and in each instance the advantages to be gained are cited.

Truck for textile mills. John C. Paddock. USP 2 492 002, Dec. 20, 1949.

A truck for use in textile mills, for transporting bobbins, quills, or the like, containing the filling and which will operate within narrow aisles. The truck has a removable container for holding the bobbins.

Fiber preparation B 1

Fiber scouring and washing bowl. Edw. H. Brooks, Sr. (½ to Edw. H. Brooks, Jr.). USP 2 493 944, Jan. 10, 1950.

This invention provides an improved fiber scouring and washing bowl which includes a perforated rotating washer or suction roll and an adjacent small breaker roll for moving the fiber from one scouring and washing bowl to the next bowl, together with a separation plate under the suction roll for separating and receiving the dirt as it is washed from the fiber as it is acted upon by the action of the rapidly rotating perforated washer or suction roll, and a hinged pressure plate for controlling and relieving the pressure from excessive water or stock on the suction roll.

Wool treatment. Henry F. Leupold & Maurice J. Kelley (to Nopco Chemical Co.). USP 2 496 631, Feb. 7, 1950.

A self-fulling and self-scouring wool treating composition which comprises sufficient amounts of a nonresinifying oil and a liquid monoacylated organic fatty ester to soften and lubricate wool fibers and a quantity sufficient to form a stable emulsion of the oil and the ester in water of a condensation product formed by heating in the ratio of one equivalent weight of a fatty acylating substance having an acyl chain of at least 8 C atoms with from 1.5 to 4.0 moles of an alkylolamine selected from the group consisting of diethanolamine, ethyl monoethanolamine, diisopropanolamine and 2-amino-2-methyl propanol-1 at a temperature and for a time sufficient to form a fatty amide.

Carding and combing B 2

Action of doffers and fancies on a woolen card. J. G. Martindale. *J. Textile Inst. 40,* T813-30 (Dec. 1949).

Four experiments on the interaction behavior of doffers and fancies are described. The experiments show by a new experimental technique how the efficiency of the action which clears the wool from a card swift is affected by doffer-swift setting, doffer speed, fancy speed and rate of feed. These conclusions were again verified using several different wools and 5 fancies.

Comparison of two intermediate feeds. J. A. B. Mitchell. *Textile Mfr. 76,* 19-21 (Jan. 1950).

Features of the bank feed and Scotch feed are discussed and results are given of a series of tests which revealed that the yarn from sets with Scotch feed was approximately 7½% stronger than that produced on those with bank feed.

Eliminating card room dust Anon. *Textile Weekly 44,* 1316 (Nov. 11, 1949).

A brief note describes a device, still in the experimental stages, for the elimination of card room dust. The device consists of a pair of small cages placed in front of the carding engine next to the calender rollers, the cages being connected to a vacuum system which draws air through the cages. The effect is to produce a downward flow of air at each card where dust arises, removing dust from the breathing level of the operative instead of drawing it upwards past the face.

Hoist for lickers of cotton cards. Ernest H. Ghant. USP 2 491 967, Dec. 20, 1949.

This invention provides a hoist for the lickers of cotton cards which requires only one operator. The licker hoist straddles the frame of a card, adjacent to the licker, and has lifting means disposed directly over the licker.

Preconditioning of cotton for dust suppression. Anon. *Textile Weekly 44,* 1622 (Dec. 16, 1949).

This is a report of a lecture by H. Paton which is based on the experience of some 250 mills using his system for oiling cotton. Some of the advantages claimed are: reduction of card room dust by 50%-78%; no bad effects on machines; improved processing; draw frame static eliminated; and,

in some instances, increased card room production.

Drafting and roving B 3

Folding device for attachment to drawing frames. Herbert J. Woods (to Burlington Mills Corp.). USP 2 497 647, Feb. 14, 1950.

In a drawing frame, including pairs of upper and lower drawing rolls, calender rolls, a tube gear, and a web reducing trumpet located adjacent the entrance to the calender rolls, between which rolls a web is adapted to pass on its way from one sliver can to another, the improvement which comprises a web folding device located on the frame adjacent the entrance to the trumpet, arranged to fold the web in an orderly manner before entering the trumpet, the web folding device comprising a pair of upright spaced cylinders between which the web passes on entering the trumpet, one of the cylinders being eccentrically mounted to permit adjustment of the distance between them.

Gill box leathers. "Lanarius". *Can. Textile J. 67*, 51-2 (Jan. 9, 1950).

This is a discussion of gill box leathers, dealing with factors affecting leather wear, and giving suggestions for increasing the life of the leather used.

High drafting; the Dodd-Whitin two-zone system. A. E. Whitehead. *Textile Weekly 44*, 1752, 1754, 1756, 1758 (Dec. 30, 1949).

Two-zone drafting by the Dodd-Whitin systems is based on the principle of effecting 2 distinct drafts and linking them together by a neutral zone in which is applied a tension draft of very small proportions. The "D. W." Super Draft is a two-zone system which embodies a double apron in the final drafting zone, and is designed to process draw frame sliver from 40 grains to 80 grains per yard, direct to finished roving, with a total drafting range of 16 to 40. Much higher drafts have been used on some types of cotton. The "D. W." Inter Draft is also a two-zone system, differing from the super draft in that fluted rolls instead of aprons are used in the final zone. This system is designed to process draw frame sliver from 40 grains to 80 grains per yard where drafts of between 10 and 18 are desired and to make a finished hank from 1.0 hank roving to 2.5 hank roving.

Roll cover for textile fiber drafting. John W. Baymiller (to Armstrong Cork Co.). Can. P. 451 602, Oct. 5, 1948.

A lap-resistant roll cover for textile fiber drafting having a working surface made of a vulcanized rubber-like butadiene acrylonitrile copolymer, having uniformly dispersed therein as the dispersed phase between about 10 and 30 parts of calcium nitrate to 100 parts of the butadiene acrylonitrile copolymer, whereby the roll cover is rendered lap-resistant.

Roll cover for textile fiber drafting. John W. Baymiller (to Armstrong Cork Co.). Can. P. 451 603, Oct. 5, 1948.

A lap-resistant roll cover for textile fiber drafting having a working surface made of a vulcanized oil-resistant resilient nonthermoplastic somewhat water vapor permeable synthetic rubber which is normally nonresistent to lapping up, having uniformly dispersed therein as the dispersed phase an effective amount of the reaction product resulting from the digestion in water dispersion of a protein and a water-ionizable modifying agent which does not deleteriously affect the protein or the synthetic rubber and combines with the protein to produce a compatible water-soluble digestion product which is readily dispersible in the synthetic rubber, whereby the roll cover is rendered lap-resistant.

Roller drafting system. H. Stein. *Textil-Praxis 4*, 307-09 (July 1949); *in German.*

The differences between theoretical and actual draft in the preliminary drafting head were investigated. Excessive differences were said to be due to slipping in the first rollers. Distribution of pressure over the rollers is of importance for correct draft, maintenance of count, and check on yarn breaks. The distance between rollers is also of importance. A number of tests were carried out to determine the forces and the nature of drafting in the preliminary and main heads. Results are presented as a draft-force diagram. The effect of draft on twist was also investigated and it was found that the yarn is not untwisted. Further mill tests are recommended.

Textile drafting apparatus. Edw. J. Abbott (to Abbott Machine Co.). Can. P. 450 831, Aug. 31, 1948.

In apparatus arranged to draft a textile sliver, front and back sets of drafting elements each adapted to grip the sliver at at least a line of contact and driven so as to establish a draft of the sliver between the sets, and means between the sets for confining the sliver being drafted, the confining means comprising a rotatable member having an end surface positioned to engage the

sliver approximately in a plane which is approximately parallel to the line of contact of the front set of drafting elements, the surface being rotatable about an axis which is approximately perpendicular thereto and which is offset from the line of travel of the sliver, the surface having components of motion in a forward direction along the line of travel of the sliver, and a further member positioned to press the sliver against the end surface, the 2 members being mounted in yielding opposition to engage the sliver between them.

Textile fiber drafting element. John W. Baymiller (to Armstrong Cork Co.). Can. P. 451 601, Oct. 5, 1948.

A lap-resistant roll cover for textile fiber drafting having a working surface made of a vulcanized oil-resistant resilient synthetic rubber which is normally non-resistant to lapping up modified with at least 15 parts of animal protein to 100 parts of the synthetic rubber, whereby the roll cover is rendered lap-resistant.

Two-piece double dog for roving machines. Wm. F. Lee & Wm. O. Junker (Lee to Junker). USP 2 496 168, Jan. 31, 1950.

In a textile roving frame the combination of a builder shaft having a portion provided with opposite ribs, a dog composed of separable sections, each clampingly engaging the ribs when the sections are connected.

Spinning B 4

Hegemax spinning process; a system for increasing the efficiency of ring frames. Anon. *Textile Mercury & Argus 121,* 886, 889 (Nov. 4, 1949).

Features of the Hegemax spinning process are described briefly. (See also TTD: *7,* 91.)

Lubrication apparatus for twister rings. Falls L. Thomason. USP 2 495 300, Jan. 24, 1950.

Apparatus for lubricating the rings and travelers in a twister frame or the like comprising the combination with a ring rail of a tray positioned below the same, the tray having upwardly extending side and end flanges and guard flanges extending upwardly into the rings, the floor of the tray and the flanges defining a well for holding a supply of lubricant for lubricating a plurality of rings.

Shirley high draft system. Anon. *Textile Mercury & Argus 121,* 13, 15 (Jan. 7, 1949).

This is a brief illustrated description of a number of modifications that have been made in the design of the mechanism of the Shirley high draft system.

Spinning apron. Henry M. Bacon & Jos. Rockoff (to The Dayton Rubber Mfg. Co.). Can. P. 451 474, Sept. 28, 1948.

An apron comprising a layer of nylon cords longitudinally arranged between an inner roller contacting layer and an outer fiber contacting layer, the outer and inner layers consisting of rubber composition and the cord layer being arranged in the neutral axis section of the apron.

Spinning machine. C. Herbert Harrigan, Wm. W. Wetzold, Gilbert F. Norcross & John C. Van Riper (to John H. Hays). USP 2 490 803, Dec. 13, 1949.

A spinning frame is provided in which the spindles and their driving mechanisms are maintained in a fixed location, in order to secure the advantages of a rigid mounting. The drafting section, which comprises a number of slow speed rotating shafts, is arranged to be raised in order to maintain the optimum distance between draft shaft and ring rail.

Spinning mule production and mean yarn count. W. Oeser. *Textil-Praxis 4,* 309 (July 1949); *in German.*

A formula is derived for mule production from Johannsen's delivery formula (1902). Simplified and adapted for the mule, the formula is useful in the mill for the comparison of production, particularly of worsted yarn. The time of the carriage movement includes factors representing the changes of spindle speeds. The final formula is followed by one used in practice which has the product of delivery times and metric yarn count as a constant.

Tape cylinder mounting. Clarence M. Gentry & Fred G. Parrott. USP 2 496 464, Feb. 7, 1950.

Provides means whereby any one of the longitudinally extending cylinders may be removed from a spinning frame, twisting frame and the like, independently of the other cylinders and whereby the bearing block disposed between the proximate ends of any 2 of the cylinders may be removed or replaced as desired without the necessity of removing the associated cylinders from the machine.

Textile mill spindle. Herbert Gleitz, Chas. E. Miller & Paul I. Thyreen (to Metal Products Co.). Can. P. 452 349, Nov. 2, 1948.

In a mounting flange construction for a textile mill spindle, a pair of substantially identical flange sections, each having a central opening and a substantially planar face surface, complemental cavities on the face surfaces, respectively, and means securing the sections together with the face surfaces in face-to-face contact and the cavities in complemental relation.

Textile spindle. Carl A. Berg (to The Fafnir Bearing Co.). USP 2 492 091, Dec. 20, 1949.

This invention provides a spindle-bearing suspension in which the outer ring of an antifriction bearing rotates with the spindle and in which lubricant is retained in an annularly cupped porton or member to be carried with the rotating parts. Upon rotation, the lubricant rotates with the cup, and centrifugal action forces the lubricant upward to apply a continuous lubricating film to the outer bearing ring. When the spindle is stopped, the lubricant returns to the cup. The cup is readily detachable and when so detached it retains all the drained lubricant, so that there need be no spilling of lubricant upon servicing the bearing.

Weighting and unweighting device for drafting rolls. Herbert J. Woods (to Burlington Mills Corp.). USP 2 492 082, Dec. 20, 1949.

In accordance with the present invention a pressure adjusting cam lever is pivotally mounted in operative relation to the roll tensioning or weighting means, which lever when in one position is arranged to apply tension to the rolls, while in another position tension is relieved. Tension may be adjusted to take up slack due to wear of the rolls by using the lever as a wrench or by turning the lever in the opposite direction the lever and associated mechanism may be removed, thus permitting removal of the upper drafting roll.

Winding and spooling B 5

Apparatus for winding strands. Games Slayter (to Fiberglass Canada Ltd.). Can. P. 452 666, Nov. 16, 1948.

A spindle for producing wound packages of strands of indefinite length, comprising a rotatable axle, fixed flanges extending at right angles thereto and vanes mounted on at least 2 flanges, each of the flanges having similar and corresponding indentations in its circumference, and the vanes, which extend outwardly beyond the circumference of the flanges, being mounted at their inner ends on pivots so positioned inwardly of the bottoms of corresponding indentations in the

flanges that they tend, when the spindle is at rest, to collapse inwardly towards its axis in the direction of one side of the indentations inwardly of which they are pivoted, but to move outwardly when the spindle is rotated.

Bobbin. Chas. K. Dunlap (to Sonoco Products Co.). USP 2 495 058, Jan. 17, 1950.

A textile bobbin comprising a fibrous tubular member adapted as a bobbin barrel, a reinforcing sleeve disposed interiorly of and in keyed engagement with the fibrous tubular member, an upper spindle bushing for the bobbin having a threaded portion at one end and a flared portion at the other end, means associated with the reinforcing sleeve for engaging the flared portion and positioning the spindle bushing to extend the threaded portion beyond the top of the bobbin, and means cooperating with the threaded portion to center the spindle bushing and secure the elements of the bobbin in assembled form.

Cord processing apparatus. Raymond E. Solliday &. John T. Gordon (to Wingfoot Corp.). Can. P. 452 421, Nov. 2, 1948.

In a twisting and doubling apparatus embodying a plurality of thread supply packages, means for joining the threads from a number of the supply packages, means for twisting the doubled threads, and stretching means disposed between the supply packages and the twisting means for introducing a uniform stretch in the doubled threads, a device for compressing and burnishing the doubled threads comprising a positively driven roll for receiving the doubled threads discharged from the stretching means, means actuating the driven roll at a rate slightly greater than the rate of discharge of the threads from the stretching means, a guide directing the threads to the positively driven roll, an idler roll disposed in substantial surface contact with the driven roll, and means urging the idler roll into contact with the driven roll.

Creel. Wm. J. Elvin & Elmer R. Stahl (to Celanese Corp. of Am.). USP 2 493 863, Jan. 10, 1950.

A creel for winding or twisting textile machines having a bar extending transversely thereof, the creel comprising a rail having one end attached to the bar, a slide telescopically carried by the rail for movement relative thereto, an arm, having a yarn guide thereon, and brackets fixed to the slide and means carried by the brackets for supporting a yarn package thereon.

Magazine wrap. Albert W. Keight & Theo. E. Carl-

son (to Camille Dreyfus). Can. P. 452 734, Nov. 16, 1948.

In a device for winding yarn onto rotating yarn holders for producing yarn packages having a transfer tail, the combination with a reciprocating beam, of a plate in surface contact therewith, a ring holder on the plate, a spinning ring in the ring holder and a traveller for winding yarn on a rotating yarn holder, the plate being positioned below and normally reciprocating with the beam and being adapted to be depressed below the normal traverse of the reciprocating beam with respect to the yarn holder, so as to cause the winding of a relatively small amount of yarn on the yarn holder at a point spaced from the main body of yarn, the small amount of yarn being available for use as a transfer tail.

Saddle, stirrup, and bearing construction for spinning or roving frames. Charlton H. Williams (to Eula W. Williams). USP 2 496 765, Feb. 7, 1950.

This invention provides an improved method and means for applying weight to the top rolls of spinning and roving frames of any type, make or model, in which the matters of wear and friction of the roll parts and the bearings are dealt with in accordance with a new mechanical construction of bearings in combination with peculiarly formed saddle construction to cooperate with such novel bearing members and in a novel manner with the stirrup which is modified to cooperate in the new action between the saddle and the bearing members.

Spindle adapter and bobbin. Trevor L. Davies (to F. L. Regnery Corp.). USP 2 485 959, Oct. 25, 1949.

This invention provides spinning spindle adapters by means of which all spinning spindles, regardless of type or make are converted to a relatively few standard spindles completely concentric, whereby in a particular mill a single standard bobbin may be employed with all spinning machines used therein regardless of the various types of spinning spindles originally employed. The spinning spindle adapter is preferably formed of metal such as aluminum and is provided with a bore designed so that the adapter may be made an integral part of the spindle with which it is associated by means of a press fit at one or more sections of the spindle; it is so designed that the bobbin associated therewith is driven from the top rather than the bottom as in prior art devices thereby resulting in a much more concentric motion.

Spinning and twisting spindle structure. John A. Kennedy (to Saco-Lowell Shops). USP 2 497 834, Feb. 14, 1950.

A textile spindle adapted for rotation about a vertical axis, including a spindle blade provided with a tapered tip at least ½ in. long adapted for driving engagement with a bobbin having a correspondingly tapered seat to fit frictionally on the tip with sufficient firmness to transmit the entire torque required to drive the bobbin and its load without abnormal slippage, the tip having a diameter of at least ½ in. at its base and a taper of from 80 to 200,000th of an in. per in. of length, and the section of the spindle immediately adjacent to and below the tip being of cylindrical form and having a diameter at least as large as that at the base of the tip, the spindle section being of substantial length as compared with the tapered tip.

Textile machinery. Edw. Kinsella (to Henry Dreyfus). Can. P. 451 437, Sept. 28, 1948.

Method of winding yarns at substantially constant linear speed comprising feeding the yarn to a rotating package, driving the package through variable speed means having speed control means associated therewith, driving the speed control means through a slipping drive and controlling the degree of slip in the slipping drive in accordance with the divergence of the actual rate of growth of the package from an arbitrary rate of growth preselected to be greater than the actual rate of growth, whereby the peripheral speed of of the package is maintained constant notwithstanding the increase of its diameter.

Traverse mechanism. Ernest K. Bauer (to Am. Viscose Corp.). USP 2 492 412, Dec. 27, 1949.

A cam-type builder mechanism for controlling the traverse of a winding or twisting machine.

Traverse mechanism. Ernest K. Bauer (to Am. Viscose Corp.). USP 2 492 412, Dec. 27, 1949.

An improved construction of traverse mechanism which is free of chains and similar relatively loose connections that are subject to stretching and the development of excessive vibration.

Winding machine. Lester Campbell (to Foster Machine Co.). Can. P. 451 869, Oct. 12, 1948.

A yarn winding machine comprising in combination a spindle for mounting a package core adapted to receive yarn from a supply bobbin, means for rotating the package core, an aspirator having a nozzle in close proximity to the surface of the package on the package core as this builds up,

suction means adapted to cause the aspirator to suck off a loose end of yarn from the package when such exists and draw a length of yarn into the aspirator, a longitudinal opening in one wall of the aspirator through which the length of yarn can be removed, sealing means normally closing the opening, a transverse slot through the aspirator to permit entry of yarn engaging means adapted to engage and remove the length of yarn through the slit, and means for opening both the sealing means to permit entry of the engaging means and the removal of the length of yarn thereby through the opening.

Yarn support. Albert W. Keight (to Camille Dreyfus). Can. P. 452 735, Nov. 16, 1948.

A yarn package support having a barrel, a flange at one end of the barrel and means at the other end thereof for receiving a magazine wrap or transfer tail, the barrel comprising a hollow tube cylindrically shaped along the major portion of its length and comprising a cone-shaped section along the remainder, the cone-shaped portion flaring outwardly toward the end of the barrel having the magazine wrap or transfer tail receiving means, and having a hollow tube of a diameter less than that of the barrel passing through the center thereof and extending beyond the cone-shaped section, the extension comprising the means for receiving the magazine wrap or transfer tail.

Yarn winding machine. Edw. R. Davis & Howard W. Doughty, Jr. (to Foster Machine Co.). Can. P. 452 521, Nov. 9, 1948.

In a winding machine, the combination of a spindle on which the package is to be wound, a motor for driving the spindle, and a switch in the motor circuit controlling the supply of power to the motor, the switch having a yarn tension actuated selector in contact with the movable relative to a conductor in increments directly proportional to changes in yarn tension, and having its resistance to movement to such yarn tension changes of the same predetermined value at all positions of the selector relative to the conductor.

Yarn processing B 6

Apparatus for regulating yarn tension. Paul J. Campbell (to Textron, Inc.). Can. P. 452 714, Nov. 16, 1948.

The combination in a tension regulator for a moving strand of yarn, of means for resisting the movement of the yarn to cause tension therein, fluid actuated means acting on the resisting means

to vary the resistance applied thereby to the yarn, and means dependent on the tension in the yarn after passing the resisting means for causing the fluid actuated means to so vary the resistance as to maintain the yarn tension substantially constant.

Bobbin arbor. Wm. E. D. Welch (to Camille Dreyfus). Can. P. 453 213, Dec. 7, 1948.

A bobbin arbor comprising a generally cylindrical body member having a plurality of circumferentially spaced longitudinally extending peripheral grooves, a radially extending arm positioned in each of the grooves, one end of each of the arms being pivoted to the base end of the member and the other end of the arm having a pin protruding therefrom and being capable of radial movement about its pivot, and a disc operatively associated with the other end of the member and adapted to be turned about the longitudinal axis of the member, the disc having a plurality of eccentric slots circumferentially spaced like the arms and into which extend the pins protruding from the adjacent ends of the arms whereby turning of the disc simultaneously protracts or retracts the arms.

Drying of yarns and the like. Rollin F. Conaway & Ira V. Hitt (to E. I. du Pont de Nemours & Co.). USP 2 495 053, Jan. 17, 1950.

A process for treating yarn which comprises passing the yarn over members having surfaces curved on a radius between about 5 feet and about 32 feet, the surfaces being heated at temperatures between 115°C and 450°C and the yarn being passed over the surfaces in a manner whereby direct contact of the yarn with the surfaces is avoided and at a rate of speed sufficient to prevent scorching.

Method of controlling thread tension. Melvin Mooney (to U. S. Rubber Co.). USP 2 493 259, Jan. 3, 1950.

The method of controlling the tensile stress in an advancing thread, which consists in advancing the thread under tension past 2 points spaced a fixed distance apart, vibrating the free portion of the thread between these points to set up periodic variations in the force exerted by the thread on one of the points, detecting variations in the periodic force of the thread at such point due to changes in the amplitude of the thread vibrations, and adjusting the tensile force on the thread in accordance with the detected variations to thereby hold the natural frequency of vibration substantially constant, thereby to keep the tensile

stress substantially constant in spite of variation in the size and elastic modulus of the advancing thread.

Process of treating yarns. Winfield W. Heckert (to Canadian Industries Ltd.). Can. P. 451 802, Oct. 12, 1948.

The process which comprises mixing staple fibers of a cellulose material with 10% to 35% of nylon staple fibers, spinning a yarn with the mixed fibers, and reacting the composite yarn with a sufficient quantity of an aqueous solution of formaldehyde to impart crush-resistance to the yarn.

Strand severing device. Carl D. Rinehart & Michael Kocsuta (to Industrial Rayon Corp). USP 2 494 490, Jan. 10, 1950.

A device for severing the remaining strand of a plurality of strands passing therethrough.

Textile yarns impregnated with lubricating compositions. John R. Caldwell (to Eastman Kodak Co.). USP 2 496 776, Feb. 7, 1950.

Textile yarns amenable to textile operations including weaving and spinning, impregnated with a lubricant containing as its essential lubricating and softening component an acetoacetyl amide.

Twist setting yarn. Imperial Chemical Industries, Ltd. Australian P. 135 137, Mar. 18, 1947.

Yarn containing staple fibers obtained from drawn filaments composed of highly polymeric linear esters obtained by heating one or more glycols of the series $HO(CH_2)_nOH$ where n varies from 2 to 10 with terephthalic acid and/or an ester forming derivative thereof, is twist set by subjecting it to a heat treatment at a temperature at least 5° higher than the temperature at which the filaments were produced, were drawn or subsequently heated, whichever was the higher temperature, but less, preferably at least 30°C less, than the melting point of the yarn, while maintaining the yarn under tension.

Winding machine. Chas. H. Jones (to Universal Winding Co.). Can. P. 451 264, Sept. 14, 1948.

A device for applying liquid to a running strand comprising an annular basin for the liquid having an inner annular wall, rising from its bottom and of much larger diameter than that of the strand, across the rim of which the strand draws in feeding through the opening at the center of the basin, and means for continuously supplying liquid to the basin in the annular space surrounding the wall to cause it to feed across its rim to be taken up by the strand as it wipes thereagainst.

Yarn products B 8

Bobbin carrier for braiding machines. Percival L. Hobourn & Wm. H. Joy. Can. P. 451 143, Sept. 14, 1948.

Improvements in bobbin carriers for braiding machines.

Braided product and method for producing the same. Norman C. Jeckel. USP 2 494 389, Jan. 10, 1950.

The method of braiding a tubular product of varying diameter over a length thereof which comprises braiding a plurality of threads at least some of which are made up of a plurality of independent strands to form a tubular braided fabric, and changing the diameter of the braided product by changing the number of strands making up at least some of the threads entering the braiding operation.

Stop motion for braiding machines. Jos. Robideau. USP 2 497 560, Feb. 14, 1950.

In a braiding machine, a stationary post through which yarn is guided, a movable braider carrier, and a stop motion actuating arm pivotally mounted on the carrier.

Yarn applications B 9

Blending of textile fibers. J. DeSchacht. *Rayonne 5*, 83, 85, 87 (1949); *in French.*

Certain characteristics of a fabric which may be improved by making use of intimate blends of suitably selected fibers are discussed.

Fibrous reinforcement for rubber articles. Dunlop Rubber Australia Ltd. Australian P. 135 146, Mar. 28, 1947.

Spun fibrous material in the form of cord or fabric is impregnated with a normally solid polyethylene glycol and united to a layer of natural or synthetic rubber, to produce a strongly bonded article. Tire covers and belting, produced by the above process, are also claimed.

FABRIC PRODUCTION C

Yarn preparation C 1

Acid treated starch and flour product. Geo. V. Caesar (to Stein, Hall & Co., Inc.). USP 2 492 552, Dec. 27, 1949.

This invention relates to the treatment of proteinaceous starch flours with concentrated acetic acid, and more particularly to converting such flours to

water dispersible products whose cooked water dispersions are substantially homogeneous and highly suitable as film-forming adhesives, sizings, and the like.

Beam warper accumulator or storage rolls. John C. Bodansky (to Cocker Machine & Foundry Co.). USP 2 491 438, Dec. 13, 1949.

In a yarn or thread beaming means, a series of freely rotative accumulator-rolls alternate of which are mounted on stationary axes with the intervening ones suspendedly-supported; means whereby the suspendedly-supported rolls are consecutively-releasable for gravitational descent; means operative to elevate the descended rolls in reverse sequence; and means effective to hold the last mentioned rolls elevated or lowered.

Controlling device for the accumulator rolls of beam warpers. John C. Bodansky (to Cocker Machine & Foundry Co.). USP 2 491 439, Dec. 13, 1949.

Yarn accumulator for warper having a common carrier for the movable rolls the descent of which is cushioned until the warp is engaged and thereafter each roll is consecutively released for gravitational descent and are lifted in reverse sequence.

Electrically operated stop motion for warping or beaming plants. Fritz Lambach & Walter Siegel (to Robt. Reiner, Inc.). Can. P. 450 936, Aug. 31, 1948.

An electrically operated stop motion for a warping or beaming plant comprising a plurality of rows of control needles responsive to breakage of warp yarn, the control needles of each row being electrically connected with each other in parallel.

"Helix" high-speed warper. J. G. van der Hofstadt. *Rayonne 5*, 107-13 (Mar. 1949); *in French.*

This is a description of the "Helix" high-speed warper, manufactured by Ateliers Mécaniques de Précision (Belgian Patent No. 475 656). The warp beam driving system and the servo-brake stop mechanism are particularly noted.

Increased efficiency of yarn sizing machine. A. Borchardt. *Kuntseide und Zellwolle 27*, 123,2, (1949).

The purpose of sizing, the established methods and machines used for sizing and drying are reviewed. The latest models of machines are described in detail. The principal feature of the Dirks air dryer is the economy obtained by mixing warm air from other processes with an amount of fresh air and drawing this mixture into the supply

of the dryer. Only one passage is necessary with a well-adjusted Dirks dryer. Schwalbe's sizing and drying machine also exceeds the efficiency and output of older machines. In this machine an exhaust produces the air current which is heated in passing through a chamber.

Process for making woven fabric and the fabric produced. Donald M. Martin (to Aqua-Sec Corp.). Can. P. 451 322, Sept. 21, 1948.

In a process for sizing warp yarns, the steps comprising treating an alkaline dispersion of an alkali-soluble water-insoluble cellulosic colloid with an oxidizing agent to lower the viscosity, individually treating warp yarns with the low viscosity dispersion, subjecting the treated yarns to pressure to cause the dispersion to impregnate the yarns, coagulating the colloid within the yarns, and drying the impregnated yarns.

Tape sizing developments; accelerated cylinder drying. Anon. *Textile Weekly 44*, 1318, 1320 (Nov. 11, 1949).

This is a report of a lecture by E. H. Jones in which features of the Shirley accelerated cylinder drying device were discussed with particular reference to slasher sizing. The device is essentially a close-fitting metal hood which envelopes the part of each cylinder surface covered by the material being dried. The hood is sealed against entry of air at the sides but is open at both ends. A slot across the middle of the cover connects with a duct leading to a suction fan. Unheated air is drawn into the hood at its ends and then passed circumferentially over the material at the correct speed. A damper in the slot makes possible adjustments to insure a uniform air speed and hence a uniform drying rate. When applied to large cylinders, the cost is said to be little more than that of the conventional type of ventilating hood. Specifications of the machine and performance data are given.

Textile apparatus. Basil G. B. Slocombe & Stephen M. Fulton (to Celanese Corp. of Am.). USP 2 493 902, Jan. 10, 1950.

A warp beam flange assembly adapted for attachment to the threaded end of a beam barrel, the assembly comprising a long collar and a flange carried by the collar at the inner end thereof, the collar having part of its bore adjacent to the outer end thereof screw threaded for attachment and adjustment on the beam barrel and having the outer end obstructed to prevent the emergence therefrom and consequent exposure of the threaded end of the barrel, the part of the bore of the

collar adjacent to the inner end thereof being left plain, whereby the plain part of the bore covers, in the outermost position of the flange, screw threads of the barrel that are engaged by the threaded part of the bore in the innermost position of the flange.

Treatment of starch containing flours with concentrated acetic acid in an inert nonaqueous diluent. Geo. V. Caesar (to Stein, Hall & Co., Inc.). USP 2 492 553, Dec. 27, 1949.

This invention relates to the conversion of starches and starch-containing flours by treatment with concentrated acetic acid in the presence of an inert non-aqueous diluent for the acetic acid, and more particularly to the conversion of such starches or flours into water dispersible products whose cooked water dispersions are substantially homogeneous, i.e., of uniform or similar chemical and physical nature throughout and do not flocculate or separate into macroscopic phases, and highly suitable as film-forming adhesives, sizing, and the like.

Weaving C 2

Automatic shuttle changing means for weaving looms. Emile A. Butin. USP 2 493 570, Jan. 3, 1950.

An automatic shuttle changing apparatus for weaving looms adapted to operate during the time during which the shuttle box plays no useful part, comprising a batten, a shuttle box disconnectably carried by the batten, automatic means for returning the shuttle box rearwardly of the extreme rear position of the batten, a holder for substitute full shuttles registering with the rear position of the shuttle box rearwardly of the rear position of the batten, means for disconnecting the shuttle box from the batten, when the shuttle therein is substantially empty, means for holding the shuttle box in register with the holder for shuttle changing and means for reengaging the shuttle box with the batten when the latter has executed a complete reciprocating movement after disengagement.

Circular cloth weaving loom; the "Fayolle-Ancet" multi-shuttle machine. Anon. *Textile Weekly 44*, 1104, 1106, 1108 (Oct. 21, 1949).

The operation of the Fayolle-Ancet circular loom is described in some detail and features of the machine are noted. Advantages claimed for the new loom are as follows: considerable production; instantaneous, automatic stopping at end breaks or the slightest sign of trouble; diminution of weaving faults; stability of adjustment

of the machine; economy of labor, power, upkeep and repairs; removal of fluff and dust by suction; less noise; and economy of fabric in cutting.

Cloth faults and their causes. J. Pollitt. *Textile Weekly 43*, 914, 916, 918, 920, 922, 924, 934 (Apr. 22, 1949).

This discussion of cloth faults, i.e. any defect which appears in the cloth whether it be caused in the production of the yarn or the manufacture of the cloth, suggests a system of classification of these faults. By this means it should be possible to obtain a quantitative estimate of the various factors involved so that corrective measures can be taken against the more important causes. Defects arising in the early processes are especially dangerous because a large amount of material may be produced before the presence of the defect is detected. It is suggested that this type of defect should receive special attention, and that full use should be made of scientific aids and the information provided by research.

Cloth roll windup and release. Alphonse J. Fiset & Carl D. Brown (to Draper Corp.). USP 2 497 120, Feb. 14, 1950.

In a loom having a sand roll, a cloth roll and cloth roll stands within which the cloth roll is retained, the improvement in means for winding up and releasing the cloth roll which comprises racks upon which the cloth roll is supported in the cloth roll stands, a shaft and gears rotated thereby and interconnected to the racks, and pretensioned, resilient means for continuously urging the shaft in a direction to raise the racks and to press the cloth roll toward the sand roll, and a means for winding down the cloth roll comprising a hand crank, a unidirectional driving clutch and reduction gearing rotated by the crank and interconnected to the gearing for the racks through the unidirectional driving clutch.

Comparison of ordinary and circular looms. Eduard Wuttig. *Textil-Praxis 4*, 324-25 (July 1949); *in German.*

The kinetic inefficiency of ordinary looms is demonstrated by showing how much energy has to be produced and destroyed again 7,000 times per hour to move a length of weft yarn weighing only a fraction of a gram. The disadvantages and advantages of the mechanical loom, a circular loom, and the Sulzer-Rossman loom are given in a table. A circular loom constructed by the author is described briefly. This loom runs silently and requires very little driving power. A number of possible modifications are mentioned.

Design of double cloths. J. Miss. *Textil-Praxis 4,* 314-15 (July 1949); *in German.*

In this discussion of the designing of double cloths details of the following methods of interlacing are given with diagrams: 1) The lower warp is bound to the upper weft in several places; 2) the upper warp is bound with the lower weft in several places; 3) special warps or wefts are woven to bind the 2 cloths. It is recommended that symbols and colors in the design be used for clarity.

Design of rayon crepes, taffetas and linings. Julius Wendlik. *Textil-Praxis 4,* 382-84 (Aug. 1949); *in German.*

Loom settings, warping instructions and rates of production are presented for a number of crepe, taffeta and lining weaves from rayon. Illustrations of the fabrics are given.

Crepes: manufacture and construction. Irving Teplitz. *Textile Mfr. 76,* 7-8 (Jan. 1950).

This discussion of crepes includes: creping, yarn denier, yarn twist, different yarn construction, ply yarns, throwing, weaving crepes, determining cost of yarn, and dyeing and finishing.

Drop box picker rod bearing. Henry M. Bacon (to The Dayton Rubber Mfg. Co.). Can. P. 450 870, Aug. 31, 1948.

A textile loom picker comprising in combination a web of rubberized fabric, reinforcing means rigidly secured to the web, the web and the reinforcing means forming a substantially cylindrical passage, and a bearing in the passage of a material harder than the material used for the reinforcing means.

Electric warp stop motion. Oscar V. Payne (to Crompton & Knowles Loom Works). Can. P. 450 869, Aug. 31, 1948.

An electric warp stop motion for a loom having a signal lamp and an electro-magnetic controller for loom stopping mechanism to be operated when the loom is stopped due to a warp fault.

Electronic weft detector for looms. John C. Manoog & Victor F. Sepavich (to Crompton & Knowles Loom Works). Can. P. 452 310, Nov. 2, 1948.

An electric weft detecting system for a loom utilizing an electronic cicruit.

Cushion lug strap. J. Edgar Moe (to The Bullard Clark Co.). USP 2 495 198, Jan. 17, 1950.

An improved lug strap construction.

Fayolle-Ancet circular weaving machine Anon. *Textile Weekly 44,* 1154 (Oct. 28, 1949).)

This is a brief note providing additional information on the circular loom: fabric produced on the circular loom may be split, if desired, and processed as a flat fabric. A small machine is available to cut the fabric and insert a false selvedge by depositing a few millimeters of collodion down the border.

Heddle mechanism for circular looms. Victor M. J. Ancet (to Regina S. A.). USP 2 492 514, Dec. 27, 1949.

A heddle mechanism for use in circular looms includes an annular support mounted concentrically with the loom shaft and having horizontal radial guideways in 2 groups in upper and lower levels. A slide having a blade at its outer end is mounted for endwise movement in each guideway and the blades on adjacent slides in the same level carry elements, such as rods or strips, extending through openings in the blades and having enlarged heads or like means for preventing their displacement. Each blade has upper and lower openings near each end and is connected to the blade on one side by elements in the upper openings and to the blade on the other side by elements in the lower openings. Heddle wires lie in each space between adjacent blades and have loops at their ends, through which pass the elements crossing the space and connecting the blades at opposite sides thereof. The slides in the 2 levels are moved radially by suitable cam means and a reed of annular form and in 2 or more sections is mounted an the annular support to overlie the slides.

Inserting the weft thread in looms. Sulzer Freres, S.A. Australian P. 135 272, Nov. 19, 1946.

To insert the weft thread with the bobbins located outside the shed, the weft thread on the inlet side of the shed is pulled back by a device in such a way that a tension is given to the inserted thread and the weft thread is drawn from the supply bobbin.

Lay construction for looms. Michael F. Kieley & Arthur R. Abbott (to Sidney Blumenthal & Co., Inc.). USP 2 496 628, Feb. 7, 1950.

A lay construction for looms including a pair of lay swords, a tubular metallic lay secured to the swords and projecting laterally outwardly therefrom, and metallic supports for all the loom shuttle boxes fixed to the lay at points laterally outside the swords.

Loom picker and joint structure therefor. Otto A. Kotteman (to Wm. D. Dodenhoff). Can. P. 451 936, Oct. 12, 1948.

A device including a loom picker having an open-

ing whereby the picker is sleeved over a picker stick, and means for securing the picker to the stick comprising a plurality of elements, the opening being sufficiently large to house one of the elements as well as the picker stick, the picker having a different opening for receiving the other element, whereby the means is substantially entirely housed within the picker to avoid projecting parts for accidentally catching a yarn, the element within the picker stick opening being actuable by the other element to clamp the picker to the stick.

Loom picking mechanism and shaft therefor. Gabriel C. Beatrice (to Crompton & Knowles Loom Works). USP 2 495 503, Jan. 24, 1950.

Improvements in picking mechanisms for looms which provide a picking shaft constructed in such manner as to hold the picking power arm and the power input member to the shaft by means which permit angular adjustment of these parts on the shaft.

Loom reed support. Leonard M. Rogers & Florence F. Donoghue (to Draper Corp.). USP 2 489 978, Nov. 29, 1949.

This invention provides a means comprising 2 members having relatively oppositely inclined reed supporting faces, the members being movable in relatively opposite directions, whereby the reed may be adjustably positioned in a plane generally normal to the plane of the reed to bring the latter plane into alignment with respect to the front faces of the back plates of the shuttle boxes.

Manufacture of a raised lining fabric on circular knitting machines. Emil Michael. *Textil-Praxis 4*, 229-32 (May 1949); *in German.*

The manufacture of a raised lining fabric on circular knitting machines is described. A number of attachments for the stuffing threads on plain and scattered materials are illustrated; photographs of several types of fabric are shown. The knitting of these types is described under the following headings: plain, double, long-striped, figured, and stuffing thread linings. Diagrams of hooks, sinkers and stitches are given.

Means for detecting caught threads in circular looms. Victor M. J. Ancet (to Regina S. A.). USP 2 495 501, Jan. 24, 1950.

A loom stop motion which operates to stop the loom in event that the warp shed is not properly opened for the passage of the shuttle. It is especially adapted for use on circular looms.

Method of weaving. Robt. Whewell (to United Merchants & Mfrs., Inc.). Can. P. 452 572, Nov. 9, 1948.

The method of producing pick-and-pick pattern effects which comprises weaving 2 cloths simultaneously, utilizing shuttles carrying 2 types of filling, first passing a shuttle in one direction in one of the cloths and on the return stroke in the other cloth, effecting the passes of the same shuttle as many times as required by the design to be produced, thereafter passing another shuttle, carrying filling of a different type, likewise in one of the cloths in one direction and in the other cloth in the return direction, effecting the passes of the second shuttle as many times as required by the design to be produced, intermittently floating at least one of the fillings over predetermined warp ends in the passage in each cloth of the shuttle carrying such filling, slitting the united edges of the 2 cloths to produce 2 cloths each exhibiting a pick-and-pick effect, and removing the floated portions of the filling to produce design areas by means of the woven-in portions of such filling.

Mounting for picker sticks in looms. Wm. H. Bahan (to Edw. F. Bahan). USP 2 495 803, Jan. 31, 1950.

This invention provides improved means for mounting the lower end of a picker stick which has several advantages over the other types of mountings heretofore employed. Among these advantages are that a much shorter leather strap is used and secondly a torsion spring is employed which is very easily removable and much more accessible than the torsion springs and mechanisms for housing as heretofore employed.

Method and device for weaving in looms. Adolf Lanz (to Baumwoll-Spinnerei & Weberei-Wettingen). Can. P. 451 324, Sept. 21, 1948.

An arrangement on looms for producing woven effects, the looms having upper and lower back rails over which the warp threads pass, an oscillating rail over which warp threads which have been divided from the other warp threads pass, an endless travelling operating means for controlling the movement of the oscillating rail, a further operating arrangement for controlling the weaving, the rail operating means and the other operating arrangement being positively connected in movement imparting relation.

Pattern mechanism for looms. Ivar O. Moberg. USP 2 491 388, Dec. 13, 1949.

A dobby mechanism comprising a set of dobby fingers, dobby jacks constructed to be connected with the harnesses of a loom, mechanism arrang-

ed to be brought into action by the fingers to operate the jacks selectively, and pattern mechanism for operating the fingers; the pattern mechanism comprising a series of cylinders, a series of rows of pins mounted on each cylinder, means supporting the cylinders for movement into and out of operative relation to the fingers to cause the rows of pins on any cylinder in the operative relation to actuate the fingers selectively and mechanism for revolving any cylinder in operative position to bring another row of pins into operative relationship to the fingers.

Picker check for looms. Edw. C. Nichols (to Draper Corp.). USP 2 489 973, Nov. 29, 1949.

This invention provides a picker check for looms which comprises a fixed metal plate, which may be adjusted, and a second metal plate at the opposite side of the shuttle box which is movable to and from the fixed plate so that the picker engaging face thereof may exert a substantially uniform pressure against the face of the picker engaged thereby, and resilient means for urging the second member into engagement with the picker.

Picker stick check for looms. Jos. J. Hemingway (to Crompton & Knowles Loom Works). USP 2 496 722, Feb. 7, 1950.

In a picker stick check for a loom having a lay and a picker stick moved in a given path along the lay by a shuttle, a flexible strap normally inclined toward the path and in the direction in which the picker stick is moved by the shuttle at a given acute angle, a pivot supported by the lay, resilient means around the pivot, and an arm movable angularly on the pivot, one end of the strap being connected to the end of the arm remote from the pivot and the other end of the strap being connected to the resilient means, the stick normally engaging the strap and upon boxing of the shuttle causing bending of the strap relatively to the arm and the latter thereafter moving angularly about the pivot to cause the strap to be disposed at an acute angle to the path less than the given acute angle.

Picker stick guide. Everett H. Ashton (to The M. W. Kellogg Co.). USP 2 496 368, Feb. 7, 1950.

This invention relates to improved means for guiding the picker stick during picking of the shuttle out of the shuttle box.

Picking motion for looms. John Heaton (to Electro-Pneumatic Looms, Ltd.). Can. P. 449 824, July 13, 1948.

A picking apparatus comprising a tubular shuttle box at each side of the lay, a source of compressed air, a pipe between each shuttle box and air source to deliver compressed air to the rear of the shuttle boxes for propulsion of the shuttle back and forth across the lay, a valve in each pipe loaded to closed position, the valves being alternately opened to admit compressed air alternately to the shuttle boxes and alternately opened under back air pressure established upon a return of the shuttle to the shuttle box, and means for adjusting the loading on each of the valves to thereby provide regulation of the air cushion in the shuttle box by which motion of the returning shuttle is arrested.

THE PRACTICAL MANAGEMENT OF LOOMS AND YARNS. J. W. Hutchinson. Published by the author, 12 Bromet Place, Eccleshill, Bradford, Yorkshire, 1949. 600+ p. Price: 28s (post-free).

Mr. J. W. Hutchinson, contributor of many articles to "The Textile Weekly" for many years, is one of the most prolific writers on practical loom and yarn preparation subjects. In this latest volume (his sixth textbook) he has surpassed himself. After surveying the preliminary operations of weaving, over 50 chapters are devoted to each separate type of loom by make, and then to an analysis of each of the various types of accessories for cotton, woolen, silk and rayon-type looms. Careful attention is paid to developments in the new yarns, even including nylon yarns, and the special weaving devices called for. Essentially this book is practical in its appeal: while there tends to be some small degree of repetition due to the particular way it is set out, to our mind this is advantageous. No manufacturing firm should be without this volume as an aid to their own training schemes, while for the student it is indispensible. The book is recommended.—*Textile Weekly.*

Preparation for carpet weaving. A. Crossland. *Textile Mfr. 76*, 22-7 (Jan. 1950).

This is a short survey of starching, tinting, and beaming of stuffer and chain warps, cheese winding of pile yarn, pile warp winding, cop winding, etc., and spool setting for Axminster, etc.

Protection rod spring. Harold Hoeber (to Hoosac Mills Corp.). USP 2 493 821, Jan. 10, 1950.

In a loom, a lay having a shuttle box at its end with a movable binder, a rockably mounted protection rod extending along the lay and having a dagger thereon movable therewith and an arm extending therefrom into engagement with the

binder and responsive to movement of the binder by a shuttle entering the box to rock the protection rod and consequently the dagger, a stationary rod attached to the lay, a crank rockably mounted on the rod and extending into engagement with the arm, and a torsion spring acting throughout the entire operation of the lay for urging the crank into engagement with the arm.

Reed for looms. Victor C. Hassold (to Steel Heddle Mfg. Co.). USP 2 494 123, Jan. 10, 1950.

In a textile reed of the all metallic type comprising dents made of thin flat strips of metal spaced near their end portions by means of coil springs in which the dents are respectively positioned, the provision of end struts made of metallic strips relatively thin in the direction across the loom, the end struts having projecting portions on the rear sides thereof extending beyond the plane of the rear edges of the dents, and pins extending through apertures in the end portions of the dents adjacent the ends of the reed and having enlarged head portions for retaining the end struts in the structure, and the shank portion of the pins being secured to the end portions of the dents through which they extend.

Selection of electric drives for looms. R. J. Demartini & A. F. Lukens. *Textile Research J. 20,* 53-64 (Jan. 1950); *A.I.E.E. Transactions 68,* Part I, 349-56 (1949).

A method is given for calculating requirements of the drive for a loom from knowledge of system constants and with extensive testing. In electrical testing the pulsating character of the load must be considered in selecting instruments and interpreting data. Also discussed is the value of inertia in the successful drive.

Shipper lever for looms. Carl D. Brown (to Draper Corp.). USP 2 493 104, Jan. 3, 1950.

The invention comprises a manually disengageable latch means at the lower end of the shipper lever by which the link therefrom to the clutch-operating means may be operatively engaged and disengaged.

Shuttle box for looms. Francis J. Sullivan & Arthur R. Abbott (to Sidney Blumenthal & Co., Inc.). USP 2 494 913, Jan. 17, 1950.

This invention provides a shuttle box with a divided front, part of which may be used for shuttle braking purposes while another part is used for shuttle aiming and guiding at the start of each flight.

Shuttle check for looms. Arthur R. Abbott, Michael F. Kieley & Frederick T. Simon (to Sidney Blumenthal & Co., Inc.). USP 2 497 711, Feb. 14, 1950.

In a shuttle box for looms, means for arresting the incoming shuttle, the means comprising a pivoted and slidable element adapted to be moved bodily and also swung by contact of the shuttle laterally toward and into braking contact with the shuttle.

Supple mottled satin. Anon. *Am. Wool Cotton Reptr. 64,* 9-10 (Jan. 5, 1950).

The use of acetate and regenerated type yarns in fabrics produce softness, color contrast, shrinkage, etc. due to the acetate yarn being not as strong, somewhat softer, and its dye absorption different from the regenerated type. A mottled satin fabric is analyzed in which 2 basic colors are obtained through cross-dyeing. The warp consists of a regenerated and acetate ply yarn, and the filling yarn has "S" and "Z" twist. The resultant fabric has a flat woven effect which is soft and flexible.

Textile loom picker Henry M. Bacon (to The Dayton Rubber Mfg. Co.). Can. P. 450 871, Aug. 31, 1948.

A textile loom picker comprising in combination a web of rubberized fabric, the web including a head, a core mounted in the head and provided with a recess adapted to be entered by a portion of a shuttle, the core being of a material softer than the material of the web, and reinforcing means partially surrounding the web and being rigidly secured to the web, the web and the reinforcing means forming with each other an opening for passage of a picker stick therethrough.

Thread cutter for weft replenishing looms. Herbert A. Whitin (Crompton & Knowles Loom Works). USP 2 494 976, Jan. 17, 1950.

This invention provides a thread cutter having a weight actuated cutter blade which operates due merely to movement of the cutter to cutting position, thereby eliminating the previously used lay actuated part.

Warp beam. Wm. Attenborough (to Frederick W. Radford). USP 2 496 844, Feb. 7, 1950.

A warp beam having at least at one end a hollow cylindrical portion, at least one axial slot in the portion, an end flange comprising a boss located in the interior of the hollow portion of the beam and at least one spoke extending out from the boss through the slot, a spindle extending axially within the beam and through the boss, an exteriorly screw threaded sleeve rotatably mounted on the

spindle, a screw threaded axial bore in the boss through which the sleeve extends with a screw engagement, and means for restraining the sleeve against axial movement.

Warp tying machine for operating upon leased warps. Chas. B. Crandall (to Barber-Colman Co.). USP 2 496 038, Jan. 31, 1950.

The invention pertains to a machine for tying leased warps and it concerns more especially an improvement in such machines permitting the use thereof upon finer yarns.

Weft replenishing mechanism for looms. Osias J. LeBlanc & Robt. S. Schedin (to Crompton & Knowles Loom Works). USP 2 497 613, Feb. 14, 1950.

In a weft replenishing mechanism having a stack of bobbins which move downwardly by gravity toward transfer position, a resilient member mounted on the mechanism tending due to the resilience thereof to move away from the bobbins, and bobbin releaser means movable from one position thereof to another position thereof incident to a weft replenishing operation of the mechanism, the releaser means in the one position thereof engaging and forcing the member against the bobbins to resist movement of the latter, the releaser means in the other position thereof being out of engagement with the member, whereupon the latter moves away from the bobbins to enable the latter to fall toward transfer position without interference by the member.

Knitting C 3

Adjustable welt for stockings. Saml. I. Burd (to Reconstruction Finance Corp.). USP 2 494 927, Jan. 17, 1950.

A stocking including a leg, an upper welt at the end of the leg, a double-walled welt below the upper welt, a spacer portion extending downwardly from the lower end of the upper welt, and a run-resisting portion connecting the lower end of the spacer portion to the one end of the double-walled welt, the other end of the double-walled welt being unconnected to the stocking.

Air control means for relooping machines. Walter O. Runcie. USP 2 492 008, Dec. 20, 1949.

This invention provides a pneumatic relooping apparatus comprising a built-in sewing machine air pump interconnected with a relooping needle assembly by means of a flexible tube, with improved and simplified air control and regulating means, the means cooperating to ensure uniformity of the pulsating air impulses generated by the pump and faultless operation of the relooping needle.

Automatic stop-recorder. Robt. H. Roughsedge & Hans G. Lustig (to Celanese Corp. of Am.). USP 2 495 825, Jan. 31, 1950.

This invention provides a noval automatic stop-recorded, which will prepare a record of the number of machine stops during the preparation of each bolt of knit fabric, thereby eliminating the visual inspection of the fabric hitherto required. This invention relates particularly to stop recorders employed in connection with a warp-knitting machine.

Circular knitting machine. Henry H. Holmes (to Wildt & Co., Ltd.). Can. P. 452 727, Nov. 16, 1948.

In a circular knitting machine adapted to produce pouches in knitted fabric, pouch compensating mechanism comprising a weight having thereon a claw arranged to engage the work solely on the side thereof where a pouch is formed, a member whereby the weight is releasably supported and upon which it is mounted for lateral movement bodily to position the fabric engaging claw for engagement with the weight at appropriate times suchwise as to move the latter laterally and enable it to assume an outwardly tilted position clear of the fabric, and means for so actuating the aforesaid member as to release the weight so that it falls freely to bring the claw into engagement with the work, and, thereafter is free to follow the path of the work and is gravity actuated to apply tension to the work.

Circular knitting machine of the independent needle type. Edw. V. Stibbe & Bert Smith. USP 2 495 872, Jan. 31, 1950.

In a circular knitting machine, in combination, a series of independent loop forming instruments, a multiplicity of angularly spaced feeds, a cam system including at least one adjustable cam at each of the feeds for effecting movements of the loop forming instruments, members to which the cams are attached, screws for adjusting the members, pinions on the screws, a common annular indexing gear with which the pinions are arranged in mesh, and means for turning the indexing gear and thereby effecting simultaneous adjustment of the aforesaid cams.

Cylinder controlling mechanism. Jos. Wawzonek (to Hemphill Co.). USP 2 493 905, Jan. 10, 1950.

For a circular, independent needle, knitting machine having a cylinder and means for rotating it, a cylinder controlling device which includes means for raising and lowering the cylinder and means for insuring positive operation of the raising means, the raising means including the drum, a cam thereon, a rocker adapted to ride upon the surface of the drum and the cam and connections between the rocker and the cylinder, whereby the rocking of the rocker is translated into vertical movement of the cylinder, the insuring means including another cam on the drum, another rocker adapted to ride upon the surface of the drum and of the other cam in opposition to the movements of the first mentioned rocker and means operatively connecting the 2 rockers.

Electric controller stop motion for machines. Edw. Vossen (to Stop-Motion Devices Corp.). USP 2 490 936, Dec. 13, 1949.

An electric controller stop motion for knitting and other machines comprises an electro-magnet which holds the latch armature in its holding position and a spring to move the armature to its releasing position upon de-energization of the electromagnet.

Feeding of elastic yarns. J. B. Lancashire. *Textile Mercury & Argus 122,* 141-142, 144 (Jan. 27, 1950).

Methods of incorporating elastic yarn into weft-knitted textiles are discussed with particular reference to the features of an attachment known as the Poron unit. The device was designed primarily to be fitted to double-cylinder half-hose machines making half-hose, etc., but it can also be applied to open-top seamless hosiery machines and to circular machines of larger diameter. The Poron unit is said to feed the same amount of yarn during every revolution of the machine. Irregularities in off-wind due to variation in friction are neutralized, and "bubbling" trouble is eliminated. Another feature of the unit is its automatic correcting of the knitting faults that are liable to occur when the elastic yarn comes from packages that are not well wound. This is accomplished by first stretching the yarn to a point approaching its elastic limit and then allowing it to relax before supplying it at a controlled rate to the laying-in feeder.

Feeler device for knitting machines. Harvey A. Tanguay. USP 2 493 557, Jan. 3, 1950.

The present invention provides a feeler device wherein a long engagement of the feeler device with the back plate through a hole of the cloth will

be had so as to make certain that there will be a good contact and adequate signal given to the operator of the machine so that the hole in the cloth will be more definitely indicated to the operator.

French and Italian textile machinery. Leo Jellig. *Tids. Textilteknik 7,* 159-67 (Oct. 1949); *in Danish.*

This article deals with the most recent designs in French and Italian textile machinery and more particularly with the full-fashioned knitting machine and a perfectly new type of preboarding machines. In order to ascertain the quality of these machines the author paid a visit to Troyes, France, and also to Milan. The article gives a detailed description of the design of the French 24-section "Nodel" machine, its properties and competitive capacity as compared with the corresponding American machines, in the form of an interview with the well-known French designer of textile machines Mr. E. Noble. A description is also given of the French preboarding machine for nylon stockings which has 90 metal forms and works continuously, being attended by 2 operators. This machine is manufactured by Maurice Héliot, Troyes. In conclusion a detailed description is given of the Italian 2-section, 51-66 gauge Breda machine. Its properties are dealt with in detail and it is finally emphasized that if small full-fashioned knitting machines are not operated by highly qualified attendants they will hardly be able to compete with multi-section machines.

Hose and circular knitting machine therefor. Wm. E. Booton & Horace Witts (to W. E. Booton Ltd.). Can. P. 452 806, Nov. 23, 1948.

A circular knitting machine organized for the production of hose and like blanks mainly by rotation, having needles, including 2 spaced groups of heel needles with fashioning needles between the groups at one side and instep needles between them at the other, means for producing a fashioned leg by varying the number of fashioning needles in activity during rotary knitting and for thereby forming a tapering gap up the back of the leg fabric, and means for producing loops of heel fabric by temporarily restraining the instep needles from knitting activity while the 2 groups of heel needles continue to knit.

Hosiery. Edw. W. Boedeker. USP 2 493 910, Jan. 10, 1950.

A stocking having a leg portion, a heel portion and a foot portion, the stocking being so constructed that certain of the marginal edge wales

thereof extend down the leg portion, around the heel portion and for the length of the foot portion, the heel portion being knitted with a reinforcing thread and provided with a gore formed by aligned apertures beginning at the start of the heel and extending substantially equidistant from the heel edge for a portion of the length of the gore, a heel mock fashioning being formed in the heel for a predetermined distance causing certain wales adjacent the continuous wales to terminate therein, the mock fashioning terminating substantially at the course where the gore terminates, sole narrowing marks being formed in the sole starting at a point substantially outwardly of the wale in which the mock fashioning terminates and starting substantially at the course where the heel mock fashioning terminates, the length of the sole narrowing marks being such that substantially all of the wales between the gore and heel mock fashioning terminate in the sole narrowing marks, the reinforcing thread of the heel extending inwardly of the start of the gore for strengthening the stocking adjacent the gore.

Hosiery. Leon J. Picard. USP 2 493 830, Jan. 10, 1950.

The improvement in closing the open toe of a machine-fabricated hose which comprises placing the mating edges of the opening between the toe and the body portion of the hose in juxtaposed, flat-seaming position over a mandrel having one electrode of a high frequency dielectric heating apparatus, with the juxtaposed edges overlying the electrode, associating a thermoplastic bonding agent with the juxtaposed mating edges, placing a second electrode of the high frequency dielectric heating apparatus over the juxtaposed mating edges and the associated thermoplastic bonding agent, and causing a high frequency current to pass between the electrodes until the thermoplastic material softens and unites with the juxtaposed edges, whereby on cooling of the softened thermoplastic material the juxtaposed edges will be bonded together.

Hosiery inspection device. Edmund J. Butler (to Maywood Hosiery Mills, Inc.). USP 2 493 803, Jan. 10, 1950.

This invention provides an inspection device in which the inspection form comprises a channel-shaped body proportioned to receive and support a stocking extended to full length, and a web portion extending between the top edges of the channel-shaped body adjacent the turning or reversing nose thereof but spaced from this nose so that it defines an opening through which a stocking ex-

tended interiorly in the channel-shaped body may be drawn for reversal over the nose and extended exteriorly on the body for inspection. By this arrangement the turned portion of the stocking is spaced at all times from the unturned portion thereof so that all attrition between the stocking portions is eliminated during reversal, and rubbing of the body of the stocking by the seam in particular is avoided.

Knitting, knitting machine, and knitted articles. Ralph N. Toone & Thos. L. Allen (to B. Toone (Nottingham) Ltd.). Can. P. 451 262, Sept. 14, 1948.

In the production of fabric on an independent needle knitting machine, feeding a knitting thread and an additional thread and while the additional thread is still running to and being knitted by the needles severing it so that all the thread extending from the point of severance to the needles is knitted in, and re-introducing a thread with a free end extending beyond the point of introduction which free end is of such length that the needles in descending to knit absorb or draw in such length and knit it.

Knitting machine. Frank J. Ford (⅓ to Max B. Striar & ⅓ to Harry Whittaker). Can. P. 449 887, July 13, 1948.

A warp knitting machine comprising a sequence of needles in line, cam means for actuating the needles, warp jacks reciprocable transversely of the needles parallel to the line of needles, jack cams operatively arranged relative to the jacks, the jack cams being reciprocable to impart the reciprocating movement to the jacks, and successive cams for reciprocating the jack cams.

Knitting machine. Henry H. Holmes (to Wildt & Co., Ltd.). Can. P. 452 728, Nov. 16, 1948.

In a knitting machine, in combination, needles and terry elements with formations adapted to be presented for cooperation with desired needles suchwise that a terry thread can be drawn over the formations by the needles to produce long sinker, i.e., terry, loops, the formations being also adapted to provide knocking-over bits for needles which function to concatenate knitted loops in the opposite direction to those concatenated by the needles which also produce terry loops.

Knitting machine. Roland Peberdy (to The Bentley Engineering Co. Ltd.). USP 2 495 543, Jan. 24, 1950.

In a knitting machine equipped with a line of latch needles, latch-retarding mechanism, between

which mechanism and the line of needles relative travel takes place as the machine is in operative position, for variably retarding the closure of the latches, comprising a latch-engaging member for engagement by the latches in their closing movement to retard the closure, and means adapted for operation of the machine itself, for shifting the member to and fro while the machine is in operation between a plurality of positions giving differing degrees of retard.

Knitting machine. Geo. O. Young (to Vanity Fair Mills, Inc.). Can. P. 452 575, Nov. 9, 1948.

In a knitting machine employing stationary sinkers, movable thread guides above the sinkers, sinker nibs, hook knitting needles and tongues, the improvement which comprises eccentric-operated means to impart longitudinal movement to the needles and tongues in combination with means to move the needles and tongues bodily laterally as they are moved longitudinally, all in timed relation to effect knitting operations.

Knitting machine. Michael Zimic & Anton Miskovsky (Miskovsky to Zimic). USP 2 493 054, Jan. 3, 1950.

In a knitting machine having a bed and a movable carriage, a yarn selector comprising: a plurality of yarn carrier bars; a yarn guide on each of the bars; the bars being movably mounted on the machine for movement in the same directions as the carriage is movable; and means to detachably interconnect the carriage and one of the yarn carrier bars, the means comprising a plurality of reciprocable pins on the carriage one for each carrier bar; a projection on each of the yarn carrier bars, any one of the pins being engagable behind the projection on a respective bar, in the direction in which the bar is being moved; and a plurality of cams adjustably mounted upon the machine adapted to elevate the pins out of engagement with the projections when the bars are moving in one direction, the cams being pivotally mounted and adapted to swing out of the way of the pins when the pins are travelling in an opposite direction as they are moved along by the carriage.

Knitting machine and method of knitting. Robt. H. Lawson (to Scott & Williams, Inc.). Can. P. 453 192, Dec. 7, 1948.

In a method of knitting heels and toes of stockings, the steps of feeding a plurality of yarns separately to the needles of a knitting machine during reciprocatory knitting so that any one yarn appears only in a recurring group of courses, progressively narrowing and widening the fabric

knit by varying, by a group of needles, the needles operated to knit the yarns with each change in the direction of the knitting movement and joining the narrowed and widened sections along suture lines, the varying of the needles operated so relating the narrowing and widening that, in widening, the group of needles added in the knitting of one or more courses divides a group of needles which were narrowed together.

Knitting machine needle. Vanity Fair Mills, Inc. Australian P. 135 526, Nov. 6, 1946.

A knitting needle includes a shank having an inwardly curved beard with a recess to receive a tongue hook carried by a channelled shank in which the shank of the needle is engaged.

Looping and seaming machine. II-IV. S. H. Boyer. *Textile Industries 113*, 136, 139, 141, 143, 145-46 (Nov. 1949); 143, 145, 147, 149, 151, 153 (Dec. 1949); *114*, 139, 141, 143-4, 147 (Jan. 1950).

II—The dismantling and assembling the Sotco steady dial looper are discussed in detail. III—Information on the operation and maintenance of the Union Special Class 41300 hosiery seamer, which can be adapted to seaming all weights of cotton, rayon, silk, and nylon full-fashioned hosiery, is presented. IV—The operation and maintenance of the Singer 242-1 hosiery seamer, which is designed for seaming fine denier nylon hosiery at high speed and can be adapted to all weights of cotton, rayon, silk, and nylon, are described. (For Part I see TTD: *6*, 851.)

Machine for treating nylon stockings. Maurice J. Heliot. USP 2 492 285, Dec. 27, 1949.

A machine for treating nylon stocking on forming blocks inside an autoclave comprises an autoclave consisting of an upper and lower part. The upper part is a bell-shaped member; the lower part is a rotating plate on which are mounted the forming blocks. The plate may be positioned to bring a forming block directly beneath the upper or bell-shaped member and the 2 parts when brought together form a tight seal. After treatment of the stockings the upper portion is raised and upon rotation of the plate another forming block carrying stockings is moved into operative position. This arrangement allows the autoclave to operate almost constantly as the loading and unloading operations can take place on 2 forming blocks while the third is in use in the autoclave.

Mechanism for feeding yarn in circular weft knitting machines. Arthur Shortland (to Mellor

Bromley & Co. Ltd.). Can. P. 452 637, Nov. 16, 1948.

In or for a circular weft knitting machine, mechanism for feeding yarn to the needles of the machine comprising a movable yarn guide and an associated yarn trapper, the guide and trapper being adapted to operate conjointly to cause a length of a yarn held between them to be initially placed so as to extend from front to back of a circular series of sinkers or web holders and to be engaged by a sinker or web holder to effect introduction of the yarn to the needles.

Needle cam for circular knitting machine. Horace L. Curtis, Geo. H. McKinley & Geo. H. Miller (to Scott & Williams, Inc.). Can. P. 451 253, Sept. 14, 1948.

In a circular knitting machine, a plurality of independent latch needles, operating butts on the needles, in combination with a stitch cam and an end raising cam therefor, the end cam being below the stitch cam and having a flat extending past the point of the stitch cam slightly less than the thickness of one needle.

Needle leveler and latch opener. Oscar Fregeolle (to Hemphill Co.). Can. P. 452 530, Nov. 9, 1948.

For a knitting machine having a cylinder with slots for needles, a needle leveler which includes means for raising needles to a predetermined level, means engageable with the hooks of needles for preventing needles so raised from moving to a higher level and means engageable with the hooks of needles for aligning the needles radially in their cylinder slots.

Picker devices. G. Stibbe & Co., Ltd., E. V. Stibbe & A. M. Brown. Australian P. 135 501, July 9, 1947.

Picker devices for use in reciprocating operation of a circular knitting machine are adapted to act each upon the other through interposed means whereby when one device is in operation the other is in a position ready to operate in its turn.

Rayon tricot fabrics. M. H. van der Noordaa. *Enka en Breda Rayon Revue 3*, 1-6 (1949); *in Dutch.*

Rayon yarn can be used in the production of knitted dress materials with excellent results. Rayon crepe yarn is especially suited for this purpose. The processing and some applications are described and 3 actual samples are shown.

Stocking. Henry R. Hinkley (to NoMend Hosiery, Inc.). USP 2 494 174, Jan. 10, 1950.

A stocking formed from an integrally knit fashioned flat blank complete with leg and foot, characterized by having at its opposite side edges, angularly offset laterally extending heel cheeks beginning at the completion of the ankle and terminating in transverse edge segments beyond the side edges of the instep, the upper portions of the heel cheeks being outwardly displaced by progressive transfer of loops from spaced wales within the body of the blank to the extent of at least one wale in spaced courses, and whereof the lower portions are displaced outwardly by progressive transfer of loops from wales within the body of the blank spaced by a greater distance than in the upper portion, the sutures resulting from the transferring having segments at an obtuse angle to each other both inclined to the longitudinal axis of the blank and terminating at the juncture corners between the heel cheek bottoms and the side edges of the instep.

Stop motion for knitting machines. Robt. H. Lawson (to Scott & Williams, Inc.). USP 2 495 067, Jan. 17, 1950.

In a knitting machine, a shaft upon which the knitted fabric is rolled up, and a pivoted lever for stopping the machine supporting one end of the shaft, the lever being responsive solely to the weight of the knitted fabric on the shaft regardless of the size of the roll.

Straightening pull-threads in nylon hose. Robt. D. Hutchison (to Chadburn Hosiery Mills, Inc.). USP 2 493 876, Jan. 10, 1950.

The method of straightening a pull-thread in nylon hose and permanently restoring the straightened thread to its original length and position, comprising stroking the pull-thread with a rounded point needle until the pull-thread is straightened, moistening the straightened thread, and heating the thread at a temperature sufficient to set the nylon thread without damaging the hose.

Wrap spindle. Oscar Fregeolle (to Hemphill Co.). Can. P. 452 529, Nov. 9, 1948.

For a circular, independent needle, knitting machine having a cylinder and needles, a wrap spindle which includes a shaft, a wrapping head mounted thereon which requires shogging in order to wrap the same needle or needles in each direction of reciprocatory knitting, means adapted to rotate the shaft in either direction in timed relation to the cylinder and other means for shogging the shaft in either direction without affecting the operation of the rotating means.

Special fabrics C 4

Apparatus for weaving fabrics of plastic materials. Edw. Welti (to Hafner Associated, Inc.). Can. P. 451 489, Sept. 28, 1948.

In a loom for weaving fabrics, the loom having a pair of spaced plates between which are supported a series of weft bobbins for automatic and successive insertion into a shuttle, a pair of heating elements mounted intermediate the lateral ends of the plates so as to form a partly enclosed box and thermostatic means for controlling the temperature within the box.

Bonded fabrics: development. R. B. Seymour & G. M. Schroeder. *Paper Trade J. 128* (Mar. 31, 1949). Ind. Dev. Section 114-16.

This is a review of the history, methods of production, and use of bonded fabrics. The physical properties of impression molded laminates reinforced with cotton duck, non-bonded cotton linters, and a bonded fabric are compared. The bonded fabric used was Steralon, a commercial product made by bonding a garnetted web of equal parts of cotton and viscose rayon with a binder which is compatible with thermosetting vinyl resins. The bonded fabric is stronger than the more expensive cotton duck. 42 references.

Cellulosic dressing. Pierre J. Guérillot (to Societe pour le Decoupage de La Cellophane & de Toutes Matiere Similaires (S.O.D.E.C.). USP 2,495 893, Jan. 31, 1950.

A process for manufacturing an aseptic bandage from regenerated cellulose sheet material previously impregnated with a germicide product, comprising forming the sheet into a plurality of strips, weaving the strips into a fabric including a warp and a weft, treating the fabric thus produced with petrol and calendering the fabric thus produced at a temperature of substantially 90°C and substantially 1,000 lbs. pressure per. in. transverse linear dimension.

Felting needle. Edson P. Foster. USP 2 495 926, Jan. 31, 1950.

This invention proposes to form one or more spurs or barbs in the body portion of a felting needle with the body portion preferably being of substantially polygonal cross-section to provide corner edges extending lengthwise of the needle in which the spurs or barbs are formed.

Fibrous products and method of making them. Carleton S. Francis, Jr. (to Sylvania Industrial Corp.). Can. P. 452 627, Nov. 16, 1948.

A process for the production of felt-like products which possess good internal cohesion comprising superimposing a plurality of layers each comprising a mixture of heat-activatable fibers and non-activatable fibers in which the heat-activatable fibers in the layers farthest removed from the point at which heat is applied for activating the fibers have a lower thermal softening point than the heat-activatable fibers in the layers which are closer to the point of the application of heat so that when the product is heated to activate the fibers, the fibers are bonded uniformly through the product.

Honeycomb elastic fabric. Kenneth W. Kerr (to U. S. Rubber Co.). USP 2 495 847, Jan. 31, 1950.

An elastic fabric having a honeycomb weave, the fabric being formed of warp and weft yarns interwoven and floated to different degrees to produce longitudinal and transverse rows of cells with ridges between them, and having interwoven therewith along the ridges that extend in one direction highly twisted and coiled textile yarns possessing good elastic properties and adapted yieldingly to contract the fabric and thereby increase the depth of the cells and render the fabric elastic.

Inked ribbon. Jacob A. L. Möller (to Manifold Supplies Co.). USP 2 492 811, Dec. 27, 1949.

As an improved article of manufacture, a typewriter ribbon and the like having a silk face and a cotton back and comprising an inked woven fabric made of a staggered weave having at least 2 nylon threads in every 9 warp threads, the remainder being silk and having the weft threads composed of cotton.

Loom for weaving pile fabrics. Eugene F. Clark (to Marshall Field & Co.). Can. P. 451 090, Sept. 7, 1948.

In combination with a loom, a plurality of spaced fingers extending warpwise of the loom, a pair of frames vertically movable on the loom, a pile thread guide bar slidably mounted on the frames, pile thread guides in the bar, means whereby the pile thread guides are shogged to various positions over the fingers and means whereby the frames are moved in vertical planes thereby carrying the pile thread guides into the shed of the loom.

Loop pile carpet fabric. Elsie C. Bloch & Godfrey Bloch. USP 2 497 716, Feb. 14, 1950.

A woven looped pile carpet fabric consisting of a warp and filling forming a ground, and loops

formed from hard twisted pile yarns 30 to 60 yds. per oz., of loop height when extended 3/16 to 5/16 in. from the ground fabric to under the pile thread, and a backing material from which the pile loops above the ground are substantially free, which constitutes an adhesive for the loops and fibers of the loops, thereby producing a carpet fabric characterized by freedom from visual imperfections usually found in carpets, free from pile crushing, capable of substantially invisible joining and true to color regardless of the direction from which it is viewed, with the fibers and loops held in at close intervals for high resistance to wear.

Method and means for producing knotted pile fabrics. Wm. T. Picking. Can. P. 452 610, Nov. 16, 1948.

A method of weaving knotted pile fabrics comprising the steps of inserting lengths of pile yarn between pairs of warps, crossing the warps behind the inserted pile yarns, beating up the crossed warps by dents of the lay, one dent on each side of the inserted pile yarn so as to grip the inserted pile yarns, between the fell and the crossed warps turning up the lower ends of the pile yarns behind the crossed portions of the warps, and then uncrossing the warps, causing them to move upwardly projecting pile ends apart laterally.

Method for producing textiles. Frederick C. Wedler (to Am. Viscose Corp.). Can. P. 452 479, Nov. 9, 1948.

A method of making a felt-like product comprising the steps of commingling at least 2 types of filaments at least one of which is of potentially adhesive heat-activatable character, forming the mixture into a thick, felt-like product under conditions of temperature such that all of the filaments are in a non-adhesive condition, and then subjecting the thick felt-like product while in a substantially dry condition to a high frequency electric field to render the activatable filaments adhesive to bind fibers in the product.

Method of and apparatus for weaving. Eugene F. Clark (to Marshall Field & Co.). Can. P. 451 089, Sept. 7, 1948.

A loom attachment for weaving pile fabrics comprising in combination with a loom, a series of spaced fingers mounted on the loom forward of the harness and extending parallel with the warp, a series of spaced pile yarn feeding guides having eyelets therein through which strands of pile yarn are threaded movably mounted above the spaced fingers, means whereby the feeding guides are shifted transversely to predetermined positions

above the spaced fingers and moved into and out of the warp whereby the pile yarn is looped over the spaced fingers and means for beating up the loops thus formed as the fabric is woven.

Method of making pile fabrics. Chas. F. Taubert (½ to Elizabeth H. Taubert). USP 2 495 666, Jan. 24, 1950.

A method of manufacturing simulated pile fabric structure which consists of compressing wool yarn in a soluble covering, inserting the yarn in a rubber base and then dissolving the covering on the yarn.

Pile fabric. Garfield J. Underwood (to Mohawk Carpet Mills, Inc.). USP 2 492 670, Dec. 27, 1949.

A pile fabric, which comprises a plurality of stuffer warp ribbons, weft threads in levels above and below the ribbons, pile yarns looped about weft yarns and raised above the level of the upper weft threads to produce a pile surface, the pile yarn loops lying in longitudinal rows, each ribbon lying beneath a single such row with the bights of the loops in the row resting upon the top surface of the ribbon, and binder warps crossing over and under the weft threads to bind them against the ribbons and lying between each 2 adjacent ribbons, the ribbons being formed of a relatively stiff material, which is relatively nondeformable in cross-section, and being longer horizontally than vertically in cross-section.

Process of impregnating thick textile fabrics with gum. Jean Colmant (to Etablissements Colmant & Cuvelier S. A.). USP 2 495 808, Jan. 31, 1950.

In a process of preparing thick textile fabrics impregnated with gum, introducing into the fabric during the weaving thereof threads forming removable cores from side to side of the fabric, withdrawing the threads from the fabric thereby leaving recesses in the fabric, then impregnating the fabric with gum and causing the gum to have access through the recesses to the interstices between the fibers of the fabric.

Production of non-woven fabrics. Anon. *Can. Textile J. 67,* 44-5 (Jan. 6, 1950).

A comprehensive report on the production of nonwoven fabrics, dealing with web forming equipment, types of fibers used, the bonding process, drying, and dyeing and finishing.

Spool axminster carpet loom. Isaac B. Bassindale. USP 2 494 983, Jan. 17, 1950.

Mechanism for driving the selvedge shuttles of a spool Axminster carpet loom incorporating upper and lower shuttle races in which the shuttles are movable, including a driver shaft, rotary shuttle drivers carried by the shaft, a rotary cam, a cam lever operable by the cam, means connected with the cam lever for driving the shaft, and a clutch coupling between the shaft and the shaft driving means whereby the shaft may be simply uncoupled from the driving means and left free without interference with the cam lever.

Textile fabric. Raymond E. Reed & John F. Ryan (to The Kendall Co.). Can. P. 453 176, Dec. 7, 1948.

As a new article of manufacture, a composite textile fabric comprising an open-mesh textile sheet material composed of regularly spaced yarns having an intimate face-to-face contact with at least one side thereof a thin uniform layer made up of a plurality of superposed carded webs of heterogeneously intermingled unspun fibers characterized by an average of at least 5% of the fibers having inherent latent coalescent characteristics with the unspun fibers water-inseparably bonded to each other and to the yarns of the open-mesh sheet material by the coalescent characteristics of the fibers themselves.

Textile fibrous product. Carleton S. Francis, Jr. Can. P. 449 784, July 13, 1948.

As an article of manufacture, a fibrous product comprising potentially adhesive fibers substantially uniformly distributed therethrough, the product being bonded by fiber-to-fiber adhesion in a group of predetermined areas to thereby reinforce the product as a whole and a second group of areas in the product being bonded to a lesser extent to provide greater porosity than that of the first-mentioned areas, the density and porosity in the second group of areas being substantially uniform throughout the entire thickness of the product at such areas.

Tuft forming sewing machine. Chas. L. Pickworth. USP 2 492 711, Dec. 27, 1949.

This invention comprises a loop holding member, a loop shearing member pivotally connected to the loop holding member and cutting edges on the loop holding and shearing members arranged to coact with a scissors-like action.

Woven fabric. Harry Crawshaw (to Camille Dreyfus). Can. P. 452 425, Nov. 2, 1948.

A belting fabric comprising weft yarns and heavy and closely spaced warp yarns woven together, and

having at short intervals along the length of the fabric, and extending at least across the whole width of the fabric between the selvedge bands thereof, an isolated weft of several times the weight of the weft employed elsewhere in the fabric.

Woven fabric. Harry Crawshaw (to Celanese Corp. of Am.). USP 2 494 646, Jan. 17, 1950.

A belting fabric comprising single wefts and heavy and closely spaced warp yarns woven together, and having at short intervals along the length of the fabric and extending at least across the whole width of the fabric between the selvedge bands thereof, grouped wefts, inserted in one shed, of the yarn employed as the single wefts elsewhere in the fabric.

Fabric applications C 6

Bag stringing machine and method. Bertie C. Golden (to Millhiser Bag Co., Inc.). Re 23 196, Feb. 7, 1950 (original No. 2 296 783, Sept. 22, 1942).

A machine for stringing bags having hems at their mouth ends, means for threading draw strings through the hems, bag reversing means supporting successive bags after reversal thereof in draw string threading position, and means for feeding bags to the bag reversing means.

Friction tape. Morris M. Danovitch (to Plymouth Rubber Co., Inc.). USP 2 492 689, Dec. 27, 1949.

A flexible, easily-tearable, electrical insulating friction tape comprising a supporting sheet member of unwoven intermingled, regenerated cellulose textile fibers bonded together by regenerated cellulose distributed among the fibers, and a reclaimed rubber-containing electrical insulating adhesive composition impregnating the sheet, adhering to the fibers thereof and forming a coating on the surface thereof.

Method of preparing oxidized cellulose gauze. Wm. O. Kenyon, Cornelius C. Unruh, & Wm. F. Fowler, Jr. (to Eastman Kodak Co.). USP 2 496 797, Feb. 7, 1950.

A method for preparing oxidized cellulose gauze which comprises forming a pad of the cellulose gauze on a perforated drum, centering the drum containing the gauze pad in a cylindrical chamber, introducing liquid NO_2 into the chamber so as to not contact the cellulose gauze pad, sealing the chamber and circulating vapors of the NO_2 therein, whereby only the vapors of the NO_2 con-

tact the gauze until the cellulose has been oxidized to a substantial degree, sousing the oxidized gauze in water free of cations and after thorough washing, drying the gauze while wound several layers deep upon the drum.

STANDARD FINISHING D

Antichlor agents. Rudolf Mönch. *Textil-Praxis 4*, 336 (July 1949); *in German.*

The scarcity of sodium thiosulfate led to experiments with other antichlors. Acidifying and antichloring can be dispensed with if bleaching is carried out between the 2 stages of washing at between 60° and 80°C. The effect of 8 chemicals was tested; ersults for various concentrations are tabulated. Sodium thiosulfate is the best agent, the next best is sodium disulfite. Ammonia is efficient only at higher concentrations and sodium hydroxide seems better. Fatty alcohol sulfonate was found to be unsuitable due to its stabilizing effect on chlorine.

Bleaching process. Harry N. Tatomer (to The Mathieson Alkali Works). Can. P. 452 351, Nov. 2, 1948.

Method comprising generating a mixture of chlorine and chlorine dioxide, absorbing a substantial portion of the chlorine and substantially all of the chlorine dioxide in water to produce a chlorine-chlorine dioxide water in which the chlorine: chlorine dioxide ratio is within the range of about 1:1-1:4, utilizing the chlorine-chlorine dioxide water in the multi-stage bleaching of a cellulosic material, the water being employed in a later stage, and scrubbing the unabsorbed gases with make-up liquor from an earlier stage, the chlorine demand of such stage being thereby partly or completely met.

Bleaching rayon staple. W. Hundt. *Textil-Praxis 4*, 26 (Jan. 1949); *in German.*

Whether to bleach rayon staple before or after spinning must be decided for each individual case. The lap should be bleached if rayon staple is to be delivered on cops. Cheeses and skeins should be bleached in package form. Lap bleaching is economical for large quantities only. Bleaching of equal quality is obtained by both peroxide and chlorine methods; the latter, of course, requires a complete removal of chlorine after bleaching.

Clip for tentering machines. Julien Dungler. Can. P. 449 737, July 13, 1948.

A tenter clip for treating fabrics, comprising a plurality of bars forming a base member and in parallel spaced apart relation perpendicular to the location of the selvedge of the fabric to be treated, a faller disposed for co-action with the base member for clipping the fabric therebetween, and means integral with the faller for urging the fabric into the spaces between the bars before the clip is closed.

Decating machine. Geo. Haeberlin (to Richmond Piece Dye Works, Inc.). USP 2 494 807, Jan. 17, 1950.

In a decating machine which includes an externally perforate hollow cylinder and means for rotating the cylinder and means for applying suction to the interior of the cylinder and a blanket running against a part of the periphery of the cylinder adapted to hold a band of textile material in engagement with the periphery of the cylinder; means for discharging steam adjacent a part of the periphery of the cylinder including nozzle orifice means extending longitudinally of the cylinder adjacent the exterior of the blanket and an arcuate face plate concentric with the cylinder surrounding the orifice means.

Material drying apparatus. Saml Martin, Jr. (to Gen. Electric Co.). USP 2 492 754, Dec. 27, 1949.

The invention provides a material drying system and an improved arrangement for controlling the system and recovering heat from the water vapor removed during the drying process.

Method of splicing sheet material. Jas. C. Platt (to Chicopee Mfg. Co.). USP 2 495 761, Jan. 31, 1950.

The method of splicing a plurality of layers of sheet material which comprises making a composite by superimposing the layers with a layer of bonding material having an open mesh structure formed of normally solid heat sensitizable adhesive polyvinylidene chloride filaments which are relatively movable to permit their individual dimensional adjustment, without any substantial positional adjustment, upon the application of bonding temperatures, and applying heat to the composite to effect the bonding operation.

Modified method for neutralizing carbonized wool with soda ash. John A. Perry. *Textile J. Australia 24*, 782, 784, 786, 788, 790, 852-53 (Nov. 1949).

A method of neutralizing carbonized wool, using only soda ash, instead of soap and soda ash, is described. This process is carried out at a relatively low pH with the soda ash and acidic wool

being allowed to remain in contact in a bowl. It is claimed that no free soda is left and that the only alkali remaining is sodium bicarbonate. This method of processing results in a considerable saving in soda ash and water. Increased production also results.

Nozzle member used for the drying of textile and other materials. Julien Dungler. USP 2 492 974, Jan. 3, 1950.

This invention provides means for increasing the speed of the drying process and securing a maximum output over a minimum area, thereby giving the possibility of considerably reducing the length of tenters or other drying machines. These results are obtained by means of the improvement according to the invention, which comprises, in principle, providing each blowing nozzle-member with at least 2 sets or rows of orifices, in the shape of slits or holes, which are arranged in at least 2 lines at right angles to the direction of movement of the product to be dried, one or some of which sets or rows are provided in the front part of the nozzle so that the outlet is effected in the opposite direction to the movement of the product, whereas the other or the others are provided in the rear part of the nozzle so that the outlet is effected in the direction of travel of the product.

Preparation of a fast-to-light substantially white jute (addition to No. 37 868). Indian Jute Mills' Assn. Research Institute. Indian P. 41 119 (through *J. Sci. Ind. Research (India)*).

Treating bleached jute with acetic anhydride at a temperature below its boiling point in the presence of an alkali metal acetate.

Speed controls in finishing. A. G. Arend. *Textile Mercury & Argus 121*, 338-41 (Aug. 26, 1949).

The advantages offered by speed controls in finishing operations are discussed and illustrated by accounts of actual mill experience.

Surface-active agents. B. J. Garceau. *Am. Dyestuff Reptr. 39*, P87-P90 (Feb. 6, 1950).

Synthetic detergents . . . up to date. I-III. John W. McCutcheon. *Soap & Sanitary Chemicals 25*, 33-45 (Aug. 1949); 43-53 (Sept. 1949); 41-52 (Oct. 1949).

This is a review of the history, types and production of synthetic detergents and a listing of more than 750 detergents by trade name. The following information is given in tabular form: trade name, manufacturer, class and formula, main uses, form, % concentration, type, and remarks. Reprints are available from the author at 475 Fifth Ave., New York 17, N. Y.

Tenter clip. Frank C. Jerauld & Harry A. MacKnight (to Winsor & Jerauld Mfg. Co.). USP 2 496 475, Feb. 7, 1950.

Certain plates which are subject to the greatest sliding contact are made by stamping them from sheet steel stock having a high resistance to wear. The parts normally in contact with the cloth being processed are made of stainless steel; a guard plate is also provided to prevent any lubrication from reaching the cloth engaging parts. Another feature in the improved clip resides in the construction of the jaw, especially the means which enable the blade to be held clear of the cloth until the very edge of the cloth is clipped tightly by the blade.

Tentering machine for drying cloth. Julien Dungler. Can. P. 449 736, July 13, 1948.

A tentering or like machine for drying cloth or other material, including nozzles for drying fluid on one or both sides of the plane of passage of the cloth or other material to be dried, characterized in that the nozzles comprise telescopically-arranged parts extensible in accordance with the width of the cloth, whereby the effective dimensions of the nozzles are automatically adjustable in accordance with the width.

Tentering or like machine for drying cloth or other material. Julien Dungler. USP 2 495 163, Jan. 17, 1950.

According to the present invention a tentering or like machine for drying cloth or other material, including nozzles for drying fluid, on one or both sides of the plane of passage of the material to be dried, is characterized in that the nozzles are incorporated also in telescopically-arranged parts which are extensible in accordance with the width of the cloth, whereby the effective dimensions of the nozzles are automatically adjustable in accordance with the width.

Textile assistant. Eduard Schwager & Jakob Bindler (to J. R. Geigy A. G.). Can. P. 451 651, Oct. 5, 1948.

Textile assistants being the reaction products from a condensation product of aromatic sulfonic acids possessing tanning properties with a quaternary ammonium compound containing a member selected from the group consisting of higher molecular aliphatic and cycloaliphatic radicals.

Watch milling and carbonizing processes for

faults. K. E. Marsden. *Textile J. Australia 24,* 832-34 (Nov. 1949).

A number of factors which can cause faults in a finished fabric are cited. The remedial steps necessary are also mentioned. The various causes of faults can be summarized as follows: 1) Mill-rigs —caused by the folds in the fabric being subjected to extra felting; 2) yarns with various felting properties—caused by too tight weaving; 3) chafes—extra pressure applied to portions of cloth during milling; 4) stains—caused by oils or metals such as copper or iron; 5) insufficient soap removal after milling—causes uneven dyeing; 6) carbonizing—may cause streaks or uneven dyeing—can be alleviated by thorough hydro-extracting and wringing.

Apparatus for fluid treating and for guiding parallel traveling textile strands. Jas. A. Heintzelman (½ to Albert Malick). USP 2 492 574, Dec. 27, 1949.

In combination a vat containing a fabric-treating liquid and adapted to receive a plurality of separate moving parallel turns of endless lengths of fabric therein, a roller mounted above the vat and over which the turns of fabric pass, a spacing device in the path of travel of the turns located between the roller and the vat, comprising a bank of spaced parallel rail posts being rotatable away from each other by fabric contact and in the direction of the travel of the moving length of fabric to eliminate abrasive strain on the moving fabric.

Apparatus for striping fabrics. Lyall N. Dexter. USP 2 494 378, Jan. 10, 1950.

Apparatus for striping fabrics comprises a trough situated above and transversely of the fabric, the trough being divided into compartments by partitions. The compartments, which are open bottomed contain liquid coloring materials. The fabric is held in contact with the bottom of the trough by means of a flexible band which extends beneath the fabric as it passes the trough.

DYEING AND PRINTING E

Applications of the automatic tristimulus integrator to textile mill practice. H. R. Davidson & I. H. Godlove. *Am. Dyestuff Reptr. 39,* P78-P84 (Feb. 6, 1950).

This paper discusses the need for numerical colorimetry, and indicates the manner in which a combined spectrophotometer and integrator satisfy that need. Several of the numerous possible applications to textile problems are described. The GAF-Librascope Automatic Tristimulus Integrator with the G. E. Recording Spectrophotometer permits tristimulus measurement and description of color with a precision equal to that of the eye. A trained colorist is superior to instruments for routine production testing, but there are special fields of application in which the instruments can be of assistance to the colorist. Some of these are in specification of standards and standard color tolerances, evaluation of levelness, dyer's brightness and fading, and in the solution of dye shading problems.

A Bibliography Of Dyeing And Textile Printing. L. G. Lawrie. London, Chapman and Hall, Ltd., 1949. 143 p. Price: 15s.

What Mr. Lawrie has done is to compile a list of books, purely and simply, and this should be helpful to future historians of our craft. But the scientist, technologist or craftsman is not, with this book-list, getting a bibliography for his money. There are mentioned 816 titles. These appear in 2 lists; one in alphabetical order of authors' names and one, with shortened titles, in chronological order. This is a neat and satisfactory arrangement of the matter presented. With very rare exceptions all the titles refer directly to dyes and dyeing, or textile finishing. We wonder if the compiler may not have missed many books, which qualify for inclusion, but the titles of which embrace neither word. He has certainly missed one: E. Valko's fine book "Kolloid-chemische Grundlagen der Textilveredlung" (J. Springer, Berlin, 1937), devoted many pages to what was then the only account, in book form, of physico-chemical investigations in dyeing. The compilation goes up to 1946; 3 years is a long time for a book list to lie fallow, and the small number of useful modern books about dyeing has grown considerably in that time.—*Brit. Rayon & Silk J.*

Degradation of viscose rayon printed by means of reduction agents. le C. Pinte & Mme. Pierret & M. Rochas. *Bull. de l'Institut Textile,* No. 15, 43-62 (Dec. 1949); *in French.*

After eliminating various factors involved in the determination of viscose rayon when it is printed with reducing agents, the conclusion is reached that oxidation of the cellulose takes place between the oxygen and sulfoxylate of formaldehyde. The oxycellulose formed is mainly of the periodate type. Deterioration of the rayon does not take place if the penetration of air during damping is completely avoided. It is shown that deterioration of cotton fabrics takes place under similar conditions.

Dyeing organic acid ester of cellulose textile materials with an aqueous solution of a normally acid-fading dyestuff, lower aliphatic alcohol, thiocyanate, and alkali metal hydroxide. Walter H. Hindle (to Celanese Corp. of Am.). USP 2 495 810, Jan. 31, 1950.

Process for the coloration of organic acid ester of cellulose textile materials, which comprises mechanically impregnating the textile material with a solution of a dyestuff, the dyestuff being normally subject to acid fading upon exposure to an acid atmosphere, in an aqueous medium comprising a lower aliphatic alcohol, a salt of thiocyanic acid which is a swelling agent for the organic acid ester of cellulose material and from 1 to 4 g per liter of an alkali metal hydroxide.

Dyeing polymeric esters. Imperial Chemical Industries Ltd. Australian P. 135 613, Mar. 25, 1947.

Aromatic polyesters of the type obtainable by heating glycols of the series $HO(CH_2)_nOH$, where n is from 1 to 10, and a terephthalic acid body, are dyed with acetate rayon dyestuffs dissolved or dispersed in aqueous media. A swelling agent for the esters may be used. In a modification, the esters are dyed with acetate rayon dyestuffs which contain a diazotizable group, in conjunction with the swelling agent, and the dyestuffs subsequently diazotized on the fiber and coupled with suitable coupling components.

Dyeing process. Robt. Burns (to Camille Dreyfus). Can. P. 452 912, Nov. 23, 1948.

Process for improving the fastness to acid fumes of colorations on organic derivative of cellulose textile materials dyed with water-insoluble anthraquinone dyes of the dispersol type, which comprises forming a water-insoluble tannic acid salt of a metal on the colored organic derivative of cellulose textile material.

Dyeing properties of nylon. I-II. Anon. *Textile Mercury & Argus 121,* 1198-1200 (Dec. 30, 1949); *122,* 14-15, 17 (Jan. 6, 1950).

Part I is a discussion of dyeing nylon with wool acid dyestuffs; Part II is a discussion of experience with the acetate rayon dyes. Nylon can behave as a protein and chemically combine (as does wool) with the acid dyes applied to it, and it can also behave as an organic solvent (as does acetate rayon) and dissolve the dispersed type of acetate rayon dyes. Nylon differs from wool and acetate rayon in generally being less receptive to dyes. There is urgent need at the present time for the discovery of some method for increasing the

capacity of nylon for absorbing or combining with dyes.

Efficient steam utilization in the piece dying and finishing trade. C. T. Wade. *Textile Mfr. 76,* 15-17, 40 (Jan. 1950).

This discussion of steam utilization is concerned primarily with the problems encountered in wool piece dyeing and finishing. Topics discussed inclue: dyeing at the boil, the "good boil", requirements affecting the design the design of piece dyeing machines, enclosed dye vessels, utilization of residual heat, the hot water processes, blowing and steaming processes, and drying processes.

Indigenous dyeing processes of Madura and Tinnevelly. V. G. Ramakrishna Iyer. *Indian Textile J. 60,* 137-39 (Nov. 1949).

The dyeing of native fabrics, *saris* and *dhotis,* with various types of dyes is discussed. The main dyestuffs used are napthol, alizarine red, Indanthrene blue, and other vat and aniline dyes. The colors used are: 1) direct, 2) basic, 3) vats, 4) sulfur and 5) acid. The problems encountered with the dyeing of the native fabrics are discussed and the actual methods used are described.

Mangles in the print works A Technical Correspondent. *Textile Weekly 44,* 40, 42, 44, 46 (July 1, 1949); 164, 166 (July, 15, 1949).

The different types of mangles are noted and suggestions are given for their proper care and maintenance under a variety of conditions.

Method of fabric coloration. Cyril M. Croft & Walter H. Kindle (to Camille Dreyfus). Can. P. 451 270, Sept. 14, 1948.

Process for the coloration of organic acid ester of cellulose textile materials, which comprises mechanically impregnating the textile material with an aqueous dispersion of a vat dyestuff, substantially completely drying the impregnated material, reducing the vat dyestuff to the leuco form on the organic acid ester of cellulose material with a dilute aqueous solution of sodium hydrosulfite containing sodium carbonate, and oxidizing the leuco vat dye on the material back to the colored form with a dilute solution of sodium bichromate, whereby the textile materials are dyed in shades of unusual fastness.

Mordant dyeing process and product. Harry W. Grimmel (to Gen. Aniline & Film Corp.). Can. P. 452 669, Nov. 16, 1948.

The process which comprises reacting on the fiber a metal carbonyl of the iron group and a mordant

dyestuff capable of forming a colored metal complex compound therewith.

Notes on the Indanthrene type of steamer. Colourist. *Textile Mfr. 76*, 31-3 (Jan. 1950).

With the growth of screen printing the smaller types of steaming unit for color fixation have found wide application, and among these the star frame steamer and the Indanthrene type of steamer have found considerable favor. In the Indanthrene type of steamer, in which the cloth is wound onto a perforated cylinder, which is then closed in an air-tight steel casing out of which the air can be driven by steam under pressure up to 7½ lbs., the steam can be moistened or cooled by atomized water sprays. Due to the small space involved the air may be completely driven out of the apparatus in a very short time. Also discussed are advantages of the Indanthrene type steamer, steam distribution, steaming instructions, steaming faults and cylinder wrapping.

Patterned fabrics. Imperial Chemical Industries Ltd. Australian P. 135 133, Mar. 13, 1947.

Dyed fabrics which exhibit pattern effects due to varying depths of shade of the dyestuff produced are characterized by being woven from at least 2 different textiles, one comprising yarns and/or monofils of a terephthalic polyester and a second comprising yarns and/or monofils of the same ester differently extended by drawing, or, a heretofore known textile material including the polyester.

Printing polyester fabrics. Imperial Chemical Industries, Ltd. Australian P. 135 134, Mar. 13, 1947.

Terephthalic polyester fabrics are printed with leuco sulfuric esters of vat dyestuffs. The printing may be carried out in the presence of a swelling agent for the polyester.

Printing polyester fabrics. Imperial Chemical Industries, Ltd. Australian P. 135 132, Mar. 13, 1947.

Terephthalic polyester fabrics are printed with acetate rayon dyestuffs. The printing may be carried out in the presence of a swelling agent for the polyesters.

Printing textiles. W. Geiringer. Australian P. 135 281, Dec. 24, 1946.

The material to be printed is previously gummed by roller on its reverse or underside and after gumming is pressed into contact with an endless blanket and secured thereto for the printing operation on a table with a pressure roller after

which it is readily detached from the blanket. Water sprays and brushes are provided at the discharge end of the blanket to wash and clean same, and doctor blades are additionally arranged for the blanket which has tensioning means through adjustable rollers.

Printing with vat colors. Technicus. *Textile Weekly 44*, 1380, 1382, 1384, 1386 (Nov. 18, 1949).

This practical discussion of vat color printing by engraved copper rollers covers the following topics: cloth damages, damages in ageing, printed linens, oxidation of vat colors, and vat blues.

Problem of dyestuff sublimation I-II. Anon. *Textile Mercury & Argus 121*, 543, 545-46 (Sept. 30, 1949); 592-93, 595 (Oct. 7, 1949).

Several types of dyestuff tend to sublime or vaporize under the influence of steam, especially under pressure, and this leads to the marking-off of the prints in the steaming process. The 3 main types of dyes thus affected are: 1—alizarine colors of all types; 2—acid and basic dyestuffs in silk printing; and 3—cellulose acetate dyestuffs. Suggestions are given for eliminating and preventing the occurrence of faults arising from dyestuff sublimation.

Scientific approach to viscose cake dyeing. W. Armfield. *Silk & Rayon 23*, 1666 (Dec. 1949).

This is a short review based on a lecture by the author outlining some of the factors affecting the levelness of viscose cake dyeing. Several test methods are mentioned for comparing the rate of dyeing of dyestuffs under simulated and practical dyeing conditions.

Single-bath chrome dyeing process for wool. Friedrich Felix, Alphonse Heckendorn, Ernst Reich & Fritz Oesterlein (to Ciba Ltd.). USP 2 496 386, Feb. 7, 1950.

A process for the production of fast dyeings on wool which comprises performing the dyeing operation with an ester of a monoazo dyestuff of the formula:

$$x\text{—}R_1\text{—}N{=}N\text{—}R_2\text{—}y$$

Wherein R_1 stands for an aromatic nucleus of the benzene series, x stands in ortho-position relatively to the —N=N— group and represents a member of the group consisting of —OH and —COOH, R_2—y stands for the radical of a coupling component, y being a hydroxyl group which stands in ortho-position to the —N=N— group, at least one of the hydroxyl groups being acylated by a benzoyl radical which contains at least one and

at the most 2 sulfonic acid groups and is free from further substituents, such dyeing being conducted by the single bath process according to which the material to be dyed is treated in a medium having a pH within the range from substantially 6 to substantially 7.35, with a solution containing at the same time dyestuff, an alkali chromate, and ammonium sulfate.

Test your dyed woolens. K. E. Marsden. *Textile J. Australia 24*, 794-95, 803 (Nov. 1949).

Methods for carrying out dyeing tests in order to determine certain fastness characteristics are discussed. One test consists of plaiting cotton, undyed wool, and the properly dyed wool, subjecting the plaited yarn to the action of hot alkiline solutions for specific periods of time and then ascertaining whether loss in color of the original yarn has occurred and whether the white yarns have been stained. A similar test is conducted in order to ascertain whether the dyes will be affected by milling. Light fastness, and lime, alkali, and acid resistance are also discussed.

SPECIAL FINISHING F

Abridged edition, treatment of nylon webbing to increase resistance to abrasion. C. A. Willis. PB 98 652ab. U. S. Air Materiel Command. Engineering Division. Materials Laboratory, Wright Field, Dayton Ohio. June 1947. 3 p. Mimeo $.25.

Abridged edition of PB 98 652 (See TTD: *7*, 58).

Applications of rubber to wool. I-II. R. W. Moncrieff. *Textile Mfr. 75*, 587-89 (Dec. 1949); *76*, 34-6 (Jan. 1950).

Part I is a discussion of the Positex process which provides a means of applying rubber to textiles in the form of a great number of discrete particles which do not constitute a continuous film. The Positex process was designed primarily to increase the strength of the low-twist yarns by preventing fiber slippage, or to enable yarns to be used commercially with much lower twist than usual. It has been found that the process produces a very definite reduction in the shrinkage potential of wool. This is discussed at some length. The discussion is concluded by brief notes on several U. S. patents concerned with the application of rubber to textile materials. Part II—This article discusses the treatment of woolen materials in an aqueous bath containing polymerized butadiene or one of its derivatives, and also the use of methyl methacrylate co-polymers. The discussion is based primarily on U. S. patents 2 447 538, 2 447 539 and

2 447 540 (see TTD: *6*, 702), 2 447 772 and 2 447 876 (see TTD: *6*, 703).

Art of stabilizing rayon type fabric. Archibald S. Stevenson & Leo Beer (to Alrose Chemical Co.). USP 2 497 519, Feb. 14, 1950.

The process of treating textile fabric of rayon type by subjecting the fabric while maintained in the open width to aqueous solution of caustic alkali in concentration of 30 to 50% at a temperature of 20 to 60°C for a period of time varying substantially inversely with the speed of penetration of caustic into the fabric, the period of time being but a few seconds where the fabric is rapidly saturated with the caustic solution, squeezing until the fabric retains 60 to 100% of caustic solution based on the fabric weight, and, within a period well under one minute after the start of the caustic impregnation, neutralizing directly without prior dilution of the caustic in the treated fabric, washing the fabric substantially to free it of the neutralized impregnating agents, drying the fabric and adjusting to predetermined width, all of the steps being performed under substantially slack condition of the length of the fabric with resultant stabilization at a length contraction materially less than that incurred in conventional shrinkage treatment.

Coating composition. Jos. A. Schroeder. Can. P. 452 428, Nov. 2, 1948.

A coating composition capable of forming an artificial rawhide covering in and about an object to which it is applied comprising glue derived from rawhide, invert sugar, glycerine, phenol, and safrol, the glue and the invert sugar together constituting the basic constituents of the composition.

Fabric treatment. Geo. W. Seymour & Geo. C. Ward (to Camille Dreyfus). Can. P. 451 938, Oct. 12, 1948.

Process for improving the ironing properties of organic substitution derivative of cellulose textile materials and articles made therefrom, which comprises treating the same with an aqueous solution of boric acid, drying the material, and then subjecting the so treated material to a heat treatment under superatmospheric pressure.

Finishing of textile materials composed of or containing animal fibers. John B. Speakman & Emma Whewell (to The Fullers' Earth Union, Ltd.). Can. P. 451 870, Oct. 12, 1948.

The process for the treatment of textile materials containing animal fibers, in order to reduce shrinkage during subsequent laundering, which com-

prises mechanically working the textile material with an abrasive powder in the presence of a non-aqueous medium in which the powder is insoluble and scouring the textile material to remove the powder and non-aqueous medium.

A LITERATURE AND PATENT SURVEY ON CREASING AND CREASE-RESISTANCE OF TEXTILES. Prepared by Francis D. Horigan & Cary R. Sage. (Bibliographic Series No. 6). Philadelphia, QM Research & Development Laboratories. 51 p. (Available through U. S. Dept. of Commerce, Office of Technical Services, Washington 25, D. C. Order PB 99 429 (mimeo) $1.50.

. . . The survey includes references to the cause, mechanism and prevention of creasing in animal, vegetable, and synthetic fibers, yarns, and fabrics, and garments made therefrom. Particular emphasis is given to test methods and procedures used in the evaluation of crease-resistance. In this study, crease-resistance is considered from 2 different standpoints: (1) the ability of a fabric to retain a crease (when pressed, for example) and (2) the ability of a fabric to resist mussing and creasing when subjected to normal wear and use. This latter (#2) is considered of most importance to the Quartermaster Research program on crease resistance. The scope of the bibliography includes the more important literature and patent references to crease-resistance from 1937 to date. Although the first patents (British) describing a method for rendering textiles crease-resistant were filed in the London Patent Office by the Tootal Broadhurst Lee Co. Ltd. as early as 1927, very little concerning the process leaked into the literature until 1937. In order to more completely round out the technical picture, a few references published prior to 1937 are included in the bibliograph. . . .—Introduction.

Manufacture of P.V.C. coated fabrics. Anon. *Brit. Plastics 22,* 20-5 (Jan. 1950).

The spreading, calendering, and embossing techniques used in the application of P.V.C. coatings to fabrics are described. The preparation of the base fabric is discussed and the method of preparation of the coating is noted. Details of methods of applying P.V.C. coatings by spreading, calendering, and embossing are discussed. Diagrammatic sketches of the machinery are also given.

Metallic naphthenate fungicides. A. E. Williams. *Textile Mercury & Argus, 121,* 924, 926 (Nov. 11, 1949).

The results of several investigations into the rot-proofing of textiles by metallic naphthenates are reported briefly. Metallic naphthenates have been made available commercially as concentrated emulsions recommended for use in bulk operations. Before use the concentrated emulsion is diluted with cold water; scouring is used to remove fillers, etc., from the fabric. Ordinary waterproofing finishes can be applied to canvas, e.g., which has been treated with metallic naphthenates. A procedure is outlined for determining the degree of dilution needed with these substances. A wetting agent may be used to facilitate penetration into fabrics that are difficult to wet. Where treated fabric is submerged in soil for long periods, a large proportion of the metallic constituent in the preservative may be lost to the soil. The use of tar, creosote or wax may serve to retard this loss.

Modification of and shrinkproofing of wools with amines. Geo. C. LeCompte. USP 2 493 765, Jan. 10, 1950.

A process for shrinkproofing wool comprising heating wool in a bath of 100% morpholine at a temperature of 90-110°C for 5 to 30 min.

New finishes. I-IX. Technologist. *Textile Mercury & Argus 121,* 498, 501, 503, 505 (Sept. 23, 1949); 537-38, 540 (Sept. 30, 1949); 881, 883-84 (Nov. 4, 1949); 1005-06 (Nov. 25, 1949); 1045-46, 1048 (Dec. 2, 1949); 1081, 1083-84 (Dec. 9, 1943); 1164, 1166, 1169 (Dec. 23, 1949); 1205-07 (Dec, 30, 1949); *122,* 184, 187-89 (Feb. 3, 1950).

Discussed in this series of articles on new finishes are the following: 1) Cotton and rayon materials —how they shrink in washing; 2) anti-shrink processes for cotton and rayon; 3) unshrinkable wool materials in theory and practice; 4) chemical treatments for wool goods; 5) active chlorine treatments for wool; 6) recent American processes; 7) some further wet chlorination processes for wool; 8) unshrinkable wool finishes based on pre-activation; and 9) unshrinkable wool produced by resin treatments.

Organic compounds of titanium: tetraalkyl orthotitanates, new waterproofing agents. Robt. J. Speer & D. R. Carmody. *Ind. Eng. Chemistry 42,* 251-3 (Feb. 1950).

The alkyl titanates, derived from the action of titanium tetrachloride on alcohols, are analogous in structure to the alkyl orthosilicates. When dissolved in organic solvents and applied to cotton, wool, felt, rayons, nylon, silk, paper, and wood, they produced highly water-repellent surfaces without altering appreciably the color, texture,

body, or air-porosity of the fabrics. Dry cleaning did not impair the surface, and it persisted through 5 to 8 washings in warm soapy water. The surface is probably formed by hydrolysis of the ester to hydrated titanic acid. If the alkyl titanates become commercially available at a reasonable cost, they may be widely applied for waterproofing fabrics.

Practical application of synthetic resins to cellulosic textiles. A. C. Nuessle. *Can. Textile J. 66,* 47-52 (Dec. 23, 1949).

Describes the properties and methods of application of various types of synthetic resins and reactants as used on cellulosic materials. The thermoplastic and partly polymerized thermosetting resins impart a full to stiff hand to the fabric by depositing the resin particles essentially on the outside of the fibers. On the other hand the thermosetting resins, which are applied in monomeric form, and the reactants (which modify the cellulose molecule) do not stiffen the fabric but produce a resistance to shrinkage and creasing by altering the mechanical properties of the fibers.

Process for impregnating fibrous materials and products thereof. Frank Y. Speight, Jr. (to Am. Cyanamid Co.). USP 2 489 985, Nov. 29, 1949.

A process for impregnating a fibrous material, e.g. glass cloth, with a bonding material containing a volatile reactive component, which process minimizes the loss of the volatile reactive component, comprises applying the molten bonding material to a desired and uniform amount, and winding the impregnated cloth onto a roll continuously along with a relatively impervious cover sheet. The impervious cover sheet may be of cellophane, glassine paper, wax paper, Holland cloth, etc. Substances which prevent good impregnation may be removed by heating the glass cloth prior to impregnation.

Rotproofing. H. W. Partridge & G. E. Key. *J. Textile Inst. 40,* P1077-89 (Dec. 1949).

This paper discusses rotproofing of cotton, linen, jute, hemp and wool against *Aspergilli, Chaetomium, Penicillia,* and bacteria. The general field of rotproofing agents and methods of application are discussed and the chemistry of some of these processes noted. A detailed explanation of the methods of testing is given. In all cases soil burial tests with subsequent tensile tests are used for evaluating efficacy of rotproofing.

Spooner polymerizing range. W. W. Spooner. *Textile Mercury & Argus 121,* 967-70 (Nov. 18, 1949).

The basic principles of resin impregnating and curing are reviewed and the machines required for applying and setting resins are described. Features of the Spooner polymerizer are noted. This machine is similar in design to the Spooner vertical dryer in which the cloth travels up and down between pressure chambers fitted with Spooner nozzles. In the polymerizer air is used at a considerable velocity to increase the rate of polymerization and a medium weight of cloth can be polymerized in under 1 minute and at much lower temperature by using the Spooner nozzle.

Textile fibers or yarns and textile materials. Saul A. Hartman. Can. P. 449 747, July 13, 1948.

A process of treating textile material formed from glass fibers to render the same resistant to abrasion which consists in subjecting the material to a weak solution of caustic soda to chemically etch the surface of the glass and then coating the material with an abrasion resistant coating material.

Treatment of cellulosic fibers. Jas. W. Stallings to Röhm & Haas Co.). Can. P. 451 506, Sept. 28, 1948.

A process for increasing the luster and water-receptivity of cellulosic yarns and fabrics which comprises treating the material in separate operations with acrylonitrile and a 2 to 30% aqueous solution of a strong hydroxide, washing the treated material until substantially free of the hydroxide, and drying the material.

Treatment of textile materials. Geo. W. Seymour & Geo. C. Ward (to Camille Dreyfus). Can. P. 451 728, Oct. 5, 1948.

In the process for treating a textile material wherein a solution of a cellulosic material is applied to the textile material and the cellulosic material is then precipitated from the solution onto the textile material, the steps of applying to the textile material an aqueous alkaline solution of a cellulosic material produced by at least partially oxidizing cellulose with an agent selected from the group consisting of periodic acid and nitrogen tetroxide, and acidifying the treated textile material so as to cause the cellulosic material to precipitate on the textile material.

Treatment of textile materials. Geo. W. Seymour & Geo. C. Ward (to Camille Dreyfus). Can. P. 451 939, Oct. 12, 1948.

Process for improving the ironing and heat-resisting properties of textile materials comprising

filaments and fibers having a basis of a non-thermoplastic textile material which comprises applying a solution of boric acid to the materials, drying the treated materials and then subjecting them to a heat treatment.

Urea-phosphoric acid method of flameproofing textiles. F. V. Davis, J. Findlay & E. Rogers. *J. Textile Inst. 40*, T839-54 (Dec. 1949).

The chemistry of a process used to impart flame-resistance to cellulosic fabrics capable of withstanding mild laundering, as a result of a urea-phosphoric acid treatment is discussed. A systematic investigation into the effects of several variables on the efficiency of the flameproofing process is also described. The conclusions arrived at as a result of these experiments can be summarized as follows: 1) The treatment of cotton fabrics with mixtures of urea and phosphoric acid gives a flameproof finish which is resistant to hot water and mild soap washings; 2) the effiriency of the flameproofing depends on the phosphorus content of the fabric and for complete flameproofing 3% phosphorus is required; 3) fabrics which have lost flame resistance as a result of mild alkali washings can again be made completely flameproof by acid treatment.

Water repellent composition containing stearamide and methylated methylol melamine. Geo. I. Cathers & Linton A. Fluck, Jr. (to Am. Cyanamid Co.). USP 2 491 249, Dec. 13, 1949.

An autodispersible water-repellent composition for textiles consisting of: stearamide, 11.4-19%; methylated methylol melamine (80% aqueous solution), 50-25%; alkali metal stearate, 0.6-1.2%; sodium isopropyl naphthalene sulfonate, 0.84-0.64%; ammonia, 8%; and water, 29.16-46.2%.

TESTING AND MEASUREMENT G

Application of the differential dyeing test for fiber maturity to the processing of cotton. Southeastern Section, AATCC. *Am. Dyestuff Reptr. 39*, P74-77, P90 (Feb. 6, 1950).

This paper describes briefly the differential dyeing test for fiber maturity and discusses some of its applications in the processing of cotton. The test was used in this study to: 1) reveal "tippiness" in cottons; 2) predict spinning quality of cotton; 3) distinguish cottons that do not dye well together; 4) diagnose processing difficulties; 5) indicate effectiveness of blending judged by number of neps; 6) indicate the nature of processing

waste; and 7) provide evidence of the relationship of fineness to maturity.

Importance of testing in textile industry. R. Sen Gupta. *Indian Textile J. 60*, 153-56 (Nov. 1949).

The author cites the importance of the various physical and chemical test methods in ascertaining the various properties of materials, and states that this can be accomplished only by systematic testing. Since the prime objective of test methods is primarily to control the quality of the products it is essential that the tests be statistically sound and be capable of correct interpretation. The importance of the testing apparatus and method of testing are also cited. Some of the precautions required in using the Indian Lea Tester (tensile strength tester) are also mentioned.

pH of fibers and textiles. F. Bryant. *Textile J. Australia 24*, 792, 794 (Nov. 1949).

The significance of the pH of a fabric, and the fallaciousness of the usual concepts of its meaning are discussed. Since, by definition, pH, is a property of a liquid, the usual concept of fiber pH is the pH of available amount of aqueous extract of a variable number of grams of fiber. It is shown that the pH value of the liquid extract from 3 fibers treated with varying amounts of sodium carbonate are all the same, because of the fact that varying amounts of extract were used.

STANDARD METHODS OF TESTS FOR TEXTILES. Handbook No. 11. London, British Standards Institution [n.d.]. Price: 21s.

This new B.S.I. handbook provides, in easily accessible form, a comprehensive range of testing methods of assessing physical and chemical properties and characteristics of fibers, yarns and fabrics. An important section is that dealing with color fastness to light and to some 18 other agencies. Certain textile terms and definitions are given. Particular applications are humidity of the air, moisture in textiles, identification of textiles, yarn count systems and conversions, designation of twist direction in yarns, and a complete test scheme for narrow fabrics. Seven of the applications are taken from existing British Standards, whilst the remainder of the material is based on generally accepted techniques evolved by the British Cotton Industry Research Assn., the Linen Industry Research Assn., the Society of Dyers and Colourists, the Textile Institute and the Wool Industries Research Assn.—*Textile Mercury & Argus.*

Theoretical considerations and measurements with

regard to the longitudinal abrasion of rayon filaments. V. E. Gonsalves. *Textile Research J. 20,* 28-42 (Jan. 1950).

A rayon filament can be abraded longitudinally by laying it around a rotating roller under a certain tension. The time required to break the filament can then be determined. In this study, a formula was derived, from certain simple theoretical assumptions, indicating the relationship between the time of abrasion until break, *t*, and the load on the thread. This formula did not correspond with experimental results. The abrasion process was examined more exactly and a formula in much better agreement with the experiment was obtained.

Transfer of DDT to foodstuffs from impregnated sacking. D. E. Butterfield, E. A. Parkin & M. M. Gale. *J. Soc. Chem. Industry 68,* 310-13 (Nov. 1949).

A method is described for determining the amount of DDT in foodstuffs, using monoethanolamine to dehydrochlorinate the DDT, followed by electrometric titration of the free chloride with silver nitrate; the monoethanolamine does not hydrolyze the fats and oils. The method has been used to determine the quantities of DDT transferred from DDT-impregnated sacking to wheat, wheat flour, soya flour, decorticated ground-nuts, and cocoa beans. Relatively large quantities of DDT may be transferred in a few months, particularly to finely divided and fatty foodstuffs, and much caution must be exercised in making recommendations for the use of DDT-impregnated sacks to prevent or control insect infestation in stored foodstuffs. The importance of vapor-phase transfer of DDT is discussed.

Clothing and fabrics G 1

Flameproof industrial clothing (materials and design). Anon. *Brit. Standards Institution Monthly Information Sheet* (April 1949).

This British Standard (1547:1949) applies to materials for flameproof industrial clothing. It specifies a method of test for the material, deals with the effect of any flameproofing treatment on the strength of materials, and gives requirements for the marking of material flameproofed with soluble deposits. Essential points of design are also covered and recommendations on maintenance are given.

Measurement of thermal transmission of textile fabrics. Gerald Winston & Stanley Backer. *ASTM Bull.* No. 162, 62-7 (Dec. 1949).

Various techniques for measuring the thermal-transmission characteristics of textile fabrics were studied for the purpose of developing a standard test for the evaluation of this property. A pilot interlaboratory investigation was first made on 4 materials; this was later extended to 24 fabrics ranging in weight from 7 to 32 oz. per sq. yd. to permit a more adequate comparison of the thermal-transmission data with the physical properties of the fabrics. Each cooperating laboratory made thermal-insulation measurements according to its own method. All the techniques employed were based upon the principle of determining the energy required to maintain a body at a constant temperature when covered by the test specimen. Conditions of testing varied from laboratory to laboratory with little agreement in actual test values for similar groups of materials, but with excellent agreement in the rankings of the thermal transmission of the various fabrics. Thickness evidenced the clearest relationship with thermal insulation, indicating that for the present, thickness values should suffice to predict fabric performance on laboratory equipment designed to evaluate the thermal transmission of fabrics under still-air conditions. Consequently there is little point in conducting an all-out program of instrument standardization at this time.

Softness and handle of textile fibers and fabrics. F. Bryant. *Textile J. Australia 24,* 804-06 (Nov. 1949).

The handle of fabrics and the evaluation of this property are discussed. The actual judgment of hand usually involves 2 properties, namely, smoothness and flexibility. Because of this, the qualitative evaluation of handle is very difficult. It is also shown that most of the finishing processes affect this property because of slight changes that occur either in flexibility or smoothness. The author recommends testing for such properties as frictional characteristics, flexibility, compressional resilience, density, drape, thickness, and thermal properties in order to obtain quanitative measures which can be used to assess fabric handle.

Instruments and instrumentation G 2

Determination of the resistance of yarns to rubbing on a metallic edge. V. Hildebrand & L. Parriaud. *Bull. de l'Institut Textile,* No. 15, 69-74 (Dec. 1949); *in French.*

The machine evolved for determining the resistance of sized yarns to rubbing consists in impart-

ing a 2-way transversal and longitudinal 2-fold movement to a steel blade in contact with the horizontal lap of the sized yarns which are kept at the same tension. The number of movements necessary to break the first 10 threads is recorded by a meter.

Means for determining the tensile stresses in haulage and other rope. Herbert Hitchen (to Brit. Ropes Ltd.). Can. P. 453 133, Dec. 7, 1948.

Means for determining tensile stresses in haulage and other ropes, comprising a main frame, a bar rigidly secured by each of its ends to the main frame, 2 pulleys secured to the frame spaced apart and rotatable about axes in fixed relation with the ends of the bar, a member engaging the bar intermediate in its length, bearings in the member, a pulley furnished with pivots engaged in the bearing in such manner that variation in the tension of a rope passing over the pulleys or rollers will vary the bending moment to which the bar is subjected, an additional pulley mounted on the main frame adapted to constrain the rope or the like to contact with the portions of the 3 first-mentioned pulleys which are located on the same side of their axes of rotation.

Method of and means for eliminating electrostatic charges in industrial processes. Philip S. H. Henry, Ian G. McDonald & John B. Todd (to The British Cotton Industry Research Assn.). USP 2 497 604, Feb. 14, 1950.

Apparatus for eliminating electrostatic charges in industrial processes by means of point discharge to ionize the air in the region of the electrostatic charges, comprising 2 separate sets of discharge points arranged side by side and relatively close to each other and located in the region, a source of high voltage for charging each set of points simultaneously but with opposite polarity, whereby positive and negative ions will be simultaneously discharged into the region and a partition of insulating material separating the 2 sets of discharging points throughout the length of the sets so as to minimize recombination of the positive and negative ions.

New apparatus for measuring the density of fibers. S. H. Mhatre & J. M. Preston. *J. Textile Inst. 40*, T831-38 (Dec. 1949).

A method for measuring the densities of fibers from which their sorption of solutes can be calculated is described. A float method was adopted for all fiber density measurements. In order to gain sensitivity a totally immersed float was used with as fine a wire as possible in order to reduce the surface tension effects. The float method was also used for making liquid density measurements but was aided by an electro-magnetic method which was used to pull down a float of a known weight and shape to a predetermined distance in a liquid whose density was being measured.

Note on the theory of lepidometer. K. Rachel Makinson. *J. Textile Inst. 40*, T809-12 (Dec. 1949).

The lepidometer, an instrument used in the study of frictional properties of wool fibers and their relationship to felting, is discussed. In this instrument the fiber is placed between 2 surfaces which are caused to reciprocate under standard pressure along the length of the fiber. The tip end of the fiber is attached to a torsion balance. Fiber travel proceeds until the tension developed in the measuring device is sufficient to arrest motion and the maximum tension developed is taken as a measure of scaliness. The developed tension depends on the difference between coefficients of friction of the fiber with and against the scales and is related to felting properties. One possible drawback cited for this instrument is that it exaggerates small friction differences, particularly when the difference between static and kinetic friction is large.

Some replica techniques useful in electron microscopy of the surface of the wool fiber. K. Rachel Makinson. *Textile Research J. 20*, 22-8 (Jan. 1950).

Techniques are described for making replicas of the surface of wool fibers, for examination in the electron microscope, without subjecting the fiber to heat or pressure. Several electron micrographs are reproduced to illustrate the appearance of normal wool fibers and fibers after various chemical and mechanical treatments. Results obtained support the view that the scales consist of a smooth layer which overlies a more resistant furrowed structure. Other features of the scales are noted, including a peculiar "fringed" edge.

Viscosity of liquids; a new measuring device. Anon. *Textile Mercury & Argus 121*, 341 (Aug. 26, 1949).

This is a brief illustrated description of a new type of industrial viscometer devised by Dr. N. A. Bruyne of Aero Research Ltd. The novelty of the instrument lies in the method of producing a known constant air pressure which forces the liquid under examination from a container into a horizontal glass capillary tube, open at its far end to the air.

TEXTILE MILLS H

Aluminum sheeting provides beauty and insulation to new, fully air-conditioned nylon mill. Anon. *Aluminum Bull 3* (Autumn 1949).

Construction features of the nylon throwing mill built for The Duplan Corp. at Winston-Salem, N. C., are described, with particular emphasis on the aluminum sheeting which aids in insulation for atmosphere control as well as providing attractive, durable walls.

Friction in textile machinery. John Henriess. *Textile Mercury & Argus 121,* 546-47 (Sept. 30, 1949).

The use of modern ball and roller bearings greatly reduces the amount of power required to drive machinery; in some instances a saving of 90% in power requirements may be realized. The coefficient of friction is discussed and the method of computing it is given. In many textile operations yarns may be severely damaged by friction. There are some operations, however, in which friction is an advantage.

Glycols in textile processing. A. E. Williams. *Textile Mercury & Argus 121,* 335-36 (Aug. 26, 1949).

A new group of synthetic polyalkylene glycols and their derivatives are of interest to the textile industry for a variety of purposes. The fluids differ both chemically and in performance characteristics from mineral, animal or vegetable oils, silicones and other synthetic oils. At present 4 series are available, 2 of which are insoluble in water and 2 of which are soluble in water. All are soluble in most organic solvents, and their viscosity covers a wide range. These glycols find application as coning, spinning, and sewing oils for cellulose acetate, nylon and glass fibers. On cotton and viscose rayon they soften as well as lubricate. As wool oils they wash out of yarn or cloth easily with a warm rinse. These fluids are also unusually resistant to ignition.

Lapping device. Cyril M. Croft, Alvin W. Bergeron & Frederick G. Dodge (to Camille Dreyfus). Can. P. 452 581, Nov. 9, 1948.

In a device for winding fabrics, the combination with means including a driven take-up roll, of a guide roll adapted to be rotated by the moving fabric, a shaft for the guide roll mounted in bearings, a support for the bearings, a pivot on which the support is mounted, and means, including a worm fixed to and rotatable with the shaft, a worm gear meshing with the worm and means

operatively connected to the worm gear actuated by the rotation of the guide roll and worm gear for causing the guide roll to be rocked in a horizontal plane.

New method for determining degree of pollution described. A Staff Report. *Chem. Eng. News 27,* 3795 (Dec. 19, 1949).

This is a report on the fifth Industrial Waste Conference held at Purdue University, Nov. 29-30. Of particular interest was a paper given by Dr. Ruth Patrick, of the Academy of Natural Sciences of Philadelphia, describing a new biological assay method for determining the degree of pollution in natural waters into which wastes have been discharged. It is held that the B.O.D. is not a reliable index. The new method is based on 1) the assumption that the undesirable characteristic of pollution destroys the normal flora and fauna in natural water, and 2) on an examination of aquatic growths which tended to show that the number of species represented in each of 7 groupings is significant rather than the number of individuals in the species. Apparently polluting agents destroy individual species selectively. By comparing the changing ratios of these species numbers it has been possible to classify waters from healthy to very polluted by direct observation. These direct classifications do not correlate with results of conventional derivative tests. Another advantage of the new method is that it does not present the problem of analyzing for every possible toxic agent or combination that might appear in industrial wastes.

Polonium-using static eliminators hazardous. Anon. *Chem. Eng. News 27,* 2428 (Aug. 22, 1949).

Note: The increasing use of strips and bars of polonium, decay product of radium, to eliminate static constitutes a serious radiation hazard, studies under the Atomic Energy Project at the University of California at Los Angeles have proved. The investigations, under the direction of F. A. Bryan and Stafford Warren, revealed that polonium continuously releases microscopic flecks of the metal or foil on which it is plated, carrying alpha particles which could easily be inhaled or swallowed with potential consequences similar to those of radium poisoning. Although the particles cannot penetrate the skin, the danger lies in their degenerative potentialities over a period of time if they should get into the body. It is recommended that all plants or persons using devices including polonium be equipped with suit-

able monitoring devices and employ properly trained personnel to prevent contamination.

Potential uses of titanium metal. O. C. Ralston & F. J. Cservenyak. *Ind. Eng. Chemistry 42,* 214-18 (Feb. 1950).

In this lead article of a symposium on production, properties, and uses of titanium, applications in high-speed light-weight textile machinery parts are cited.

Preventing corrosion of textile machinery; research at T.M.M.'s Helmshore laboratories. Anon. *Indian Textile J. 60,* 128-30 (Nov. 1949).

The best and most economical methods of preventing corrosion of textile machinery are discussed. One process makes use of a coating with high resistance to moisture, chemicals, oils, greases, etc. This is a 3-coat process and is used primarily on machinery that is to be stored. Another quite similar process uses a transparent hot dip plastic, one coat of which is sufficient, it is said, to protect against all forms of corrosions even under extreme conditions.

Textile industry adds economy, efficiency with Celanese plastics. Anon. *Celanese Plastics 7,* 1, 4 (May 1949).

A loom apron, of 20 gage transparent Lumarith sheet simplifies the problem of keeping the cloth clean, while permitting inspection and giving superior service. Quills are now injection molded from Lumarith and Forticel for 7¢, compared with 12¢ for hard maple bobbins, and the plastic quills stand up better in use. Cake collars or inserts are economically made of Lumarith sheet. Bobbin knobs are injection molded of Lumarith and Forticel.

Textile trade effluents and their treatment. W. P. Hazeldine. *J. Textile Inst. 40,* P1090-96 (Dec. 1949).

This paper discusses the methods of treating waste waters from textile plants in order to prevent them from contaminating streams and public water ways. Various textile processes are mentioned and the means for treating the waters from these processes discussed. The methods for treating bleach, dye, starch, etc., liquors are all mentioned.

Textile trade effluents and their treatment. J. Klein. *J. Textile Inst. 40,* P1097-1106 (Dec. 1949).

This paper discusses the effects and methods of

eliminating polluting constituents from textile mills. The effects of corrosive acids, alkalies, organic matter, toxic substances, suspended solids, and colored substances on stream life are noted. An ideal standard is set for the effluent which is being discharged into a river. It should be clear, colorless, odorless, neutral, free from toxic substances, free from oily or greasy matter, low in organic matter free, from excessive mineral salts, and low in suspended matter. Finally the physical and chemical methods of treating textile wastes are discussed.

Treatment and disposal of industrial waste waters. B. A. Southgate. PB 97 491. 1948. 327 p. diagrams, tables. (Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. Price: $3.65.)

This book describes the effects of pollution of streams by industrial waste waters, the general methods of treatment available and the special methods devised to solve some of the problems of the main groups of industries. Data included from many papers published in British and accessible foreign journals during the past 25 years. A few hitherto unpublished data have been included.

CHEMISTRY AND PHYSICS OF TEXTILE MATERIALS I

Fractionation of starch. Part III—Amylose-iodine reaction. R. S. Higginbotham. *J. Textile Inst. 40,* T783-808 (Dec. 1949).

Using a much wider range of iodine concentrations that hitherto used it is shown that the absorption of iodine by amylose does not reach a limiting value other than that imposed by the solubility of iodine. It has also been found that absorption takes place in 2 stages. In the first stage there is no simple relationship between the amount of iodine absorbed and the free iodine concentration, but in the second stage the amount of iodine absorbed is a linear function of the logarithm of the free iodine concentration. During the first stage the absorption spectrum of the absorbed iodine remains constant, but as soon as the second stage is reached it begins to change in such a way as to suggest that the additional iodine is being forced into the amylose helices which already contain iodine (see TTD: *6,* 737 for Part I and II).

Investigations on the fundamental chemistry of cellulose and its derivatives. Quarterly progress report No. 2, Dec. 1, 1946-Feb. 28, 1947. Richard M. Badger. California Inst. of Tech-

nology, Pasadena, Calif. Contract N6 ORI-102, Task Order No. 6. PB 98 828. *Bibl. of Technical Reports 12,* 231 (Jan. 16, 1949). 10 p. tables. Microfilm $1.25; Photostat $1.25.

Investigations were made to develop further physico-chemical methods for the characterization of cellulose and its derivatives, particularly of nitrocellulose. Though complete success has not been achieved, a procedure has been developed to a point where it is now possible to make some observations of practical interest by use of the electron microscope.

Measurement of R. F. transmission through coated fabrics. Leonard Hatkin. PB 99 433, Sept. 1949. U. S. Camp Evans Signal Laboratory. 20 p., photos, graphs, tables. Microfilm $1.75; Photostat $2.50.

Mechanics of elastic performance of textile materials. III—Some aspects of stress analysis of textile structures—continuous-filament yarns. Milton M. Platt. *Textile Research J. 20,* 1-15 (Jan. 1950).

Stress analysis methods as applied to textiles are illustrated through a study of the forces produced when a continuous-filament yarn is stressed in tension. The effects of yarn twist and yarn size on the tensile properties of singles continuous-filament yarns were shown to depend upon the stress distribution. Mathematical formulas were derived to express variations in tensile characteristics as a function of yarn geometry. The influence of fiber properties is described and illustrated by experimental data obtained for viscose, acetate, and nylon of various singles geometry. (For Part I & II see TTD: *5,* 447 & *6,* 504.)

Moisture adsorptive properties of textile yarns at low temperatures. R. C. Darling & H. S. Belding. PB 99 293, Nov. 1945. Harvard Univ. Fatigue Laboratory. 28 p., graphs, tables. Microfilm $2.00; Photostat $3.75.

New method for forming vinyl polymers in wool. M. Lipson. *Nature 164,* 576 (Oct. 1, 1949).

A brief communication describing experiments in pretreating wool to promote polymerization using 1) pretreatment with thiolacetic acid, 14.5%, 2) pretreatment with sodium bisulfite, 10.7%, and 3) pretreatment with sodium hydrosulfiite, 3.1%. Wool without pretreatment did not show any significant increase in weight. The mechanism involved is noted briefly.

Origin of hygroscopicity of jute. M. K. Sen & P. H. Hermans, *Nature 164,* 628-29 (Oct. 8, 1949).

This is a brief communication reporting investigations that led to the conclusion that the greater hygroscopicity of jute is almost wholly due to polyuronides, xylan and hexosan, and that the major part of lignin is inactive as regards moisture absorption.

Plasticizing crystalline polymers. C. B. Havens. *Ind. Eng. Chemistry 42,* 315-19 (Feb. 1950).

Linear crystalline polymers, which are coming into wide use in the textile field (nylon, polyethylene, Vinyon, Saran, etc.), are frequently modified with plasticizers. This paper presents equations relating melt viscosity, modulus or stiffness, and flex temperature with plasticizer concentration. From measurements on a single composition, constants for these equations can be obtained which will predict properties at other concentrations and for mixed plasticizers. For Saran (vinylidene chloride-vinyl chloride copolymer), data are given on temperature coefficient of solvent power and on variation with plasticizer content of stiffness, hardness, impact strength, ultimate elongation, tensile strength, and clarity for various plasticizers. Effects of copolymer composition on crystallinity, plasticizer compatibility, and plasticizer effectiveness are shown.

Prevention of supercontraction in modified wool fibers. Alfred E. Brown, Janet H. Pendergrass & Milton Harris. *Textile Research J. 20,* 51-2 (Jan. 1950).

Describes experiments to determine the supercontraction behavior of modified wool fibers. Data are given for wool modified with hydrosulfite and ethylene dibromide. The modified fibers supercontracted less than 1% in bisulfite; the untreated fibers supercontracted almost 20%. It was found that alkaline hydrosulfite is an excellent supercontraction medium. The addition of ethylene dibromide prevented supercontraction damage in boiling bisulfite solutions. The mechanism involved is discussed briefly.

Static electrification in the processing of fibers: variation with moisture regain during carding. J. F. Keggin, G. Morris & A. M. Yuill. *J. Textile Inst. (Trans.) 40,* T702-14 (Oct. 1949).

An experimental technique is described by which the electrostatic charge generated by a fiber during processing can be measured. The amount of charge measured on the slivers of cotton, viscose, flax, cellulose acetate, wool, casein, Ardil, and nylon at various moisture levels is given. The fibers are divided into 2 groups as a result of this experiment. For wool, casein, Ardil, nylon, and

cellulose acetate the charge increases with decreasing regain until at levels corresponding roughly to the moisture take-up of the fibers at 60-70% R. H. the static electrification tends to reach a steady value of the same order for all the fine fibers. For the cellulose fibers cotton, flax and viscose the charges developed are much lower than for the protein fibers. The charge increases with decreasing regain but a constant level is not attained. It was also found that all of the cellulose fibers tend to be negatively charged while the protein fibers are positively charged.

Submicroscopic structure of cellulose from nitrogen sorption measurements. C. M. Hunt, R. L. Blaine & John W. Bowen. *J. Research NBS 43*, 547-54 (Dec. 1949); *Textile Res. J. 20*, 43-50 (Jan. 1950).

A sample of cotton linters swollen with strong alkali and given a solvent exchange treatment was found to have a large surface area available to nitrogen. Pore size distributions showed most of the nitrogen was adsorbed in pores having radii of about 20A. Cotton swollen with water only and given solvent exchange also had a much larger surface than untreated cotton. Most of the nitrogen was adsorbed in pores having calculated radii of about 16A.

A SURVEY OF GENERAL AND APPLIED RHEOLOGY. G. W. Scott Blair. 2d ed. London, Sir Isaac Pitman & Sons Ltd., 1949. 314 p. Price: 40s net.

. . . Scott Blair is one of our most eminent English rheologists and along with Hatschek, de Waele and many others was one of the pioneers in the study of rheology in Britain. The publisher's leaflet states that: "This work is written mainly for the practical rheologist and covers a wide field, ranging from plastics to the detection of pregnancy in animals, and including material on dairying, metallurgy, oils, bitumen, cement, ceramics, rubber, grease, glass, inks, honey, starch and fibers, pharmacy and geology . . . Rheologists working in many different branches of science and industry will find this book an accurate source of information and a most useful aid in coordinating their activities." This statement is a modest estimate of a very valuable contribution to the literature of rheology which should be read not only by those who call themselves rheologists, but by all those engaged in the arts and crafts where the flow and deformation of matter play their part—and it is difficult to think of any industry where these properties are not of primary importance.—*Chemistry & Industry.*

Susceptibility of some parachute textiles to microbiological attack. F. Millard. PB 99 412, 1949. Gt. Brit. Ministry of Supply. Aeronautical Research Council. 6 p., graphs, tables. (Availabe from British Information Services, 30 Rockefeller Plaze, New York 20, N. Y. $.45.)

Symposium on photochemistry in relation to textiles. Special Representative. *Brit. Rayon & Silk J. 26*, 50-1, 61 (Nov. 1949); *Silk & Rayon 23*, 1500, 1502, 1504, 1506, 1508 (Nov. 1949).

The Society of Dyers and Colourists heard 26 papers at their recent meeting. Eight groups of papers were read and discussed. This report discusses these 8 groups briefly under the following group titles: 1) Measurement of Fading, 2) Fading of Dyes, 3) Dye-sensitized Photodegradation, 4) Photodegradation of Wool and Alginate Rayon, 5) Theoretical Aspects of Photochemical Phenomena, 6) Practical Aspects of Fading, 7) Photodegradation of Carbohydrates, and 8) General.

Textile research at work. Rene Bouvet. *Rayon & Syn. Tex. 31*, 42-4 (Feb. 1950).

This is an abstract of a paper presented at T.R.I. meeting. Examples are given of the successful application of research on problems such as changing from skeins to cakes, use of S and Z flyers, replacement of knitted cake covers, warping directly from cakes, curling of tricot fabrics, modern overfeed pin tenter, Ceglin-formaldehyde stabilizing process, improvements in tire cords, crimped staple in wool manufacture, varied length staple and tow-to-top systems, fabric development and papers and publication.

Thermodynamics of 1-component and 2-component elastic systems. Sidney M. Katz. *Textile Research J. 20*, 16-21 (Jan. 1950).

The thermodynamic analysis of stress in one-component, one-phase elastic systems is discussed. It is suggested that the stress be evaluated in terms of entropy and enthalpy contributions. The analysis was extended to 2-component, 2-phase systems, and the necessary equations were derived; the temperature effect on swelling was taken into account. The basic hypotheses of the kinetic theory of rubber elasticity were shown to lead to conclusions which are thermodynamically impossible.

Theoretical considerations of detergency. Ernst K. Goette. *J. Colloid Sci. 4*, 459-84 (Oct. 1949).

This review is an attempt to offer a coherent presentation of experimental facts and theoretical

considerations which have been published chiefly since 1939. 94 references.

TEXTILE EDUCATION AND RESEARCH J

AATCC annual meeting. Anon. *Textile Industries 113,* 108-15, 139-40 (Dec. 1949); *114,* 109, 111, 113, 137 (Jan. 1950).

Abstracts of many of the technical papers presented at the Atlantic City convention of the AATCC are given. Included are the following: "Helindon Dyestuffs for Wool", by Dr. H. Luttringhaus; "Evaluation of Wetting Agents", by Leonard Shapiro; "Recent Results at Textile Research Institute and the Textile Foundation", by Dr. J. H. Dillon; "Problems in Ageing Textile Prints and Their Control", by Paul J. Choquette & Otto F. Habel; "Detergency Research at the Institute of Textile Technology"; by Dr. Wm. P. Utermohlen, Jr.; "Catalytic Oxidation and Degradation of Cellulose", by Dr. W. Geo. Parks; "Occurrence of Soluble Wool-Substances as a Result of the Sulfuric Acid Carbonizing Process", by Jackson Bauer; "Textile Education and Research", by Bertrand W. Hayward; "Static in Textile Processing," by D. H. Lehmicke; "Nylon Staple in Hosiery", by D. H. Heckert; "Chemical Reactivity of Wool in Relation to Anti-Shrink Processes", by Dr. P. Alexander; "Proposal for More Rapid Bleaching Process", by L. P. Seyb & J. L. Foster; "Tests for Evaluating Dye Characteristics and Dyeing Methods", by Northern New England Section; "Differential Dyeing Test for Cotton Fiber Maturity", by Southeastern Section; "Acid Colloids of Resins", by Rhode Island Section; "Wet Processing Full-Fashioned Hosiery", by Harold L. DeTurck.

ANALES DE INVESTIGACION TEXTIL. Publicatión de la Sección de Estudios e Investigación. Vol. I. Barcelona, Spain, Asociación Nacional de Ingenieros de Industria Textiles, 1949. 100 p. *In Spanish.*

This publication contains the minutes of the First Session of the Section of Studies and Research of the National Association of Engineers of the Textile Industry (Spain) and the following papers which were presented at that meeting: "Study of the Diameter of Yarn and the Factors that Determine Its Variation", by A. Barella; "The Phenomena of Adsorption in the Textile Industry", by J. Cegarra; "Phenomena of Degradation in Wool", by J. P. Puig; "Textile Research in Foreign Countries", by J. M. Barella; and a discussion of these papers.

Announces radioactive dye. Anon. *Am. Wool Cotton Reptr. 63,* 42-3 (Dec. 22, 1949).

Summaries of papers presented at the technical session of the AATCC annual convention are given. Among subjects covered are flammability, speedier bleaching, acetate dyes, etc.

ANNUAL REPORTS OF THE SOCIETY OF CHEMICAL INDUSTRY ON THE PROGRESS OF APPLIED CHEMISTRY. Vol. 33. London, Published by the Society, 1949. 742 p.

This comprehensive work contains several sections of importance and interest to those engaged in the textile industry. These include: Fats, Fatty Oils and Detergents by N. D. Sylvester, Protein Fibers by D. Traill, Cellulose and Textile Chemistry by S. M. Neale, Pulp and Paper by E. L. Hill, and Starch by J. W. Corran. The production of the book is now substantially back to the standard of the years before 1939.—*J. Textile Inst.*

British textile machinery research. T. M. M.'s latest venture. J. S. Barke. *Indian Textile J. 60,* 6-7 (Oct. 1949).

The setting up of a research station by the Textile Machinery Makers Ltd. is discussed. The first of 2 main objectives of the research which will be carried on will be to obtain a fresh approach to spinning and drafting processes with a view toward effecting major advances in the state of knowledge of these processes and in the evolution of new machinery. The second objective is to serve as a link between the development departments maintained by the operating members of T.M.M., giving assistance when necessary and passing on information as to recent advances in the various fields of textiles.

Central research agency established by British Textile Machinery Makers. Anon. *Textile Industries 114,* 96-7 (Jan. 1950).

The new central research organiaztion, T. M. M. (Research) Ltd. with its Research Station at Helmshore is described. The main objectives of the organization are: (1) to find a fresh approach to problems presented by opening, drafting, and spinning processes; and (2) to serve as a link between the development departments maintained by the machinery manufacturers.

Cluett, Peabody encourages research. Anon. *Textile Industries 113,* 97-9 (Dec. 1949).

The projects and construction features of Cluett Peabody's new Research and Science building are described, and a chart is given showing the or-

ganization of the research group.

Developments in the wear resistance of textiles and related papers published in Germany during World War II. *Melliand Textilber.* n.d. PB 99 296. 347 p., photos, drawings, graphs, tables. Microfilm $9.00; Photostat $43.75. (Available from Office of Technical Services, Washington 25, D. C.)

Compiled from articles that appeared mainly in *Melliand Textilber.* from 1939 to 1947 and from unpublished manuscripts.

Explore technical progress. Anon. *Am. Wool Cotton Reptr. 63,* 43, 45 (Dec. 29, 1949).

A digest of many of the papers, presented at the Atlantic City meeting of the AATCC, concerning specialized finishes and dye research is presented.

Higher technological education and research in textiles. W. E. Morton. *Fibres 10,* 433-35 (Dec. 1949).

The need for a thorough grounding in basic science is the keynote of this paper. It is indicated that with the entrance of the graduated student into industry, the possibilities of pursuing purely scientific studies are in general remote. The author favors a specialized line of approach since a concentrated attack in a comparatively narrow field permits a student to enter the boundaries of knowledge in that field and thereby became familiar with the problems and to look with a critical eye on the needs in his chosen field. Also stressed is the desirability of post-graduate and operational (industrial) research to broaden the scope of knowledge of a student in his chosen field.

Hosiery's new research effort. Anon. *Textile Mercury & Argus 121,* 893-94 (Nov. 4, 1949).

This is a brief account of the newly-formed Hosiery and Allied Trades Research Assn. and the research station it has established at Nottingham, England.

Over-extending research. Anon. *Am. Wool Cotton Reptr. 64,* 13, 36 (Jan. 5, 1950).

The results of too tight technical control of production by the research department at Collins & Aikman Corp. are discussed. Specifications, outlined by research, are now being used as guides rather than rules, and more efficient operation is resulting.

Painting the pattern of progress. J. R. H. Van Nouhuys. *Cotton Trade J.* (International Ed., 1949-1950), 77.

This is a brief review of the activities of the Vezelinstituut T. N. O. (Fiber Research Institute T. N. O.) written by the Director. The Fiber Research Institute T. N. O. is part of the National Council for Industrial Research (T.N.O.), the Netherlands.

Philadelphia Textile occupies new quarters. Anon. *Textile Industries 113,* 107 (Dec. 1949).

A description together with a floor plan of the new school of the Philadelphia Textile Institute is presented.

Pilot plant equipment, Report of Committee on. *Am. Dyestuff Reptr. 39,* 51-8 (Jan. 23, 1950).

This is a report compiled by a special committee of the A.A.T.C.C. which was appointed to study the pilot plant facilities that might be made available for A.A.T.C.C. research. Institutions, laboratories, and firms possessing such equipment are listed. In some instances specifications of the equipment are also given.

Probing the future. D. DeMeulemeester. *Cotton Trade J.* (International Ed., 1949-1950), 60-61.

This is a brief review of cotton fiber research at the University of Ghent, Belgium.

Production-improving technology presented at AATCC annual. Anon. *Textile World 99,* 109-13, 226, 228, 230, 232 (Dec. 1949).

This article presents a short review of some of the papers and exhibits at the annual convention of the A.A.T.C.C. at Atlantic City. Included in the exhibits reviewed are dye nets of Orlon, synthetic-resin-type finishes, Rhonite R-1, a chrome-steam process for dyeing nylon with chrome dyes, a permanent mothproofing compound, and the Color-Eye for precise color matching.

Report of the Danish Textile Research Institute for the year 1948. R. W. Asmussen. *Tids. Textilteknik 7,* 113-18 (July 1949); *in Danish.*

This article is a report written by the director of the Danish Textile Research Institute. In section 3: Basic Research, the following subjects are referred to: A) chlorite bleaching, B) investigations on the elasticity of cellulose fibers, C) colour measurements, spectral colorimetry, whiteness measurements (by means of the new measuring apparatus designed by the Institute), D) the loss of strength in nylon yarns when exposed to radiation. In section 4: Applied Research, starch and sizing investigations are dealt with. In section 5 a report is given of the consultative activity of the Institute with respect to the following items:

A) problems submitted to the Institute, B) examination of textile auxiliary materials, C) examination of bleaching plants. In conclusion a list is given of 38 publications issued by the Research Institute (1944-49).

Research in industry. Sir Edw. Appleton. PB 97 127, 1948. 84 p., table. (Available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. $.55.)

A series of articles originally published in the "Board of Trade Journal" between May 1947 and Mar. 1948. The subjects covered include cotton, glass, wool, rayon, pottery, iron and steel, electronics, lace, linen, boots and shoes, paint, furniture, the electrical industry and consumer goods, plastics, machine tools, light engineering, industrial design, and radar. Appendixes list the establishments of the British Dept. of Scientific and Industrial Research and Industrial Research Associations.

Research in wool textiles; W.I.R.A.'s Director's report for 1948-49. Anon. *Textile Weekly 44*, 328, 330 (Aug. 5, 1949).

Research activities of the Wool Industries Association are reviewed. Projects mentioned include: measurement of the effect of top irregularity; development of an auto-levelling device for producing more level slivers; reduction of processes by the development of high-draft spinning; a detailed study of each part of the woolen card; faults in worsted yarns; yarn irregularity; warp tension; a roller let-off device; and a prototype dropper pirning machine.

Research; our contribution to the industry we serve. Anon. *Platt's Bull. 6*, 211-17 (Oct. 1949).

This is a brief, illustrated description of the research facilities of the T. M. M. (Research) Limited at Helmshore, near Manchester (England). The 2 main purposes of the establishment are: 1) study of fundamental problems in the manipulation of fibers with a view to increased knowledge of processes and the evolvement of new and improved machines, and 2) to serve as a link between the development departments in the operating companies and to keep their technical staffs informed of the latest developments in textile technology and engineering in order to avoid duplication of effort.

SHIRLEY INSTITUTE YEARBOOK, 1949. [Manchester, England]. British Cotton Industry Research Association, 1949. 112 p. Price: 5s.

This first edition of what we hope will be a regular publication, is a well-planned and attractively produced guide to the activities and history of Shirley. In a greeting the chairman, Sir Harold Parkinson, says "The man in the street—the interested layman—has sometimes complained at the lack of information available to him about the activities of this great institution. This Yearbook is our attempt to meet him and at the same time to give more information to our members and to the scientific world. Since it is the first we have issued it includes much historical background." After various chapters describing the buildings, the historical background, the present structure and services to members, the volume includes the full report for 1948 and appendices giving a complete list of members, governors and council, committee, staff by departments, journals taken in library, publications in 1948, lectures by the staff in 1948, and the teachers panel. There is also a photographic supplement "Scenes at Shirley in 1948."—*Silk & Rayon.*

Textile fiber advances. Anon. *Am. Wool Cotton Reptr. 63*, 11-12 (Dec. 22, 1949).

Summaries of talks on mildew-resistance, wool research, a pre-setting machine for acetate tricot, etc. presented at a meeting of the Textile Research Institute are given.

TEXTILE INFORMATION GUIDE. London, Association of Special Libraries and Information Bureaux (A.S.L.I.B.). [n.d.]

It is the textiles and allied trades edition of the Association's guides to sources of information in Great Britain and it lists among other things the main trade organizations, textile libraries and museums, research associations and learned societies, and publications including the trade press.—*Textile Mercury & Argus.*

Wider textile uses now for radio-isotopes. Anon. *Textile World 99*, 129, 131, 200 (Dec. 1949).

New uses for radioactive materials in solving textile problems include the following: checking on what happens to the different fibers in a blend, at any or all points during processing; the retention of alkali, oil or other materials, by wool, checked by the use of tracers; the efficiency of crease-resistance or water-repellent compounds checked quantitatively. Sensitive tests for determining the rate of migration of a plasticizer onto a test panel can be conducted with the aid of a Geiger counter. These and other uses are discussed. The precautions necessary in using radioactive materials are also explained.

Index to Authors

VOLUME 7, NUMBER 3, MARCH 1950

	Column No.
Abbot, A. R.	193, 198
Abbott, E. J.	177
Allen, T. L.	205
Ancet, V. M. J.	193, 194
Appleton, E.	250
Arend, A. G.	218
Armfield, W.	225
Arthur, J.	170
Ashton, E. H.	196
Asmussen, R. W.	249
Attenborough, W.	199
Backer, S.	234
Bacon, H. M.	179, 192, 199
Badger, R. M.	241
Bahan, W. H.	195
Barke, J. S.	247
Bassindale, I. B.	213
Bauer, E. K.	183
Baymiller, J. W.	176, 177, 178
Beatrice, J. W.	194
Beer, L.	227
Belding, H. S.	242
Berg, C. A.	180
Bergeron, A. W.	238
Bindler, J.	219
Blaine, R. L.	244
Blair, G. W. S.	244
Bloch, E. C.	211
Bloch, G.	211
Bodansky, J. C.	188
Boedeker, E. W.	203
Booton, W. E.	203
Borchardt, A.	188
Bouvet, R.	245
Bowen, J. W.	244
Boyer, S. H.	207
Brooks, E. H., Sr.	174
Brown, A. E.	243
Brown, A. M.	208
Brown, C. D.	191, 198
Bryant, F.	233, 235
Burd, S. I.	200
Burns, R.	222
Butin, E. A.	190
Butler, E. J.	204
Butterfield, D. E.	234
Caesar, G. V.	187, 190
Caldwell, J. R.	186
Campbell, L.	183
Campbell, P. J.	184
Carlson, T. E.	181
Carmody, D. R.	229
Cathers, G. I.	232
Clark, E. F.	211, 212
Colmant, J.	213
Conaway, R. F.	185
Crandall, C. B.	200
Crawshaw, H.	214, 215
Croft, C. M.	223, 238
Crossland, A.	197
Cservenyak, F. J.	240
Curtis, H. L.	208
D'Alelio, G. F.	173
Danovitch, M. M.	215
Darling, R. C.	242
Daul, G. C.	171
Davidson, H. R.	220
Davies, T. L	182
Davis, E. R.	184
Davis, F. V.	232
Demartini, R. J.	198
DeMeulemeester, D.	249
DeSchacht, J.	187
Dexter, L. N.	220
Dodge, F. G.	238
Donoghue, F. F.	194
Doughty, H. W., Jr.	184
Dungler, J.	216, 218, 219
Dunlap, C. K.	181
Elvin, W. J.	181
Felix, F.	225
Findley, J.	232
Fiset, A. J.	191
Fluck, L. A., Jr.	232
Ford, F. J.	205
Foster, E. P.	210
Fowler, W. F., Jr.	215
Francis, C. S., Jr.	210, 214
Fregeolle, O.	208, 209
Fulton, S. M.	189
Gale, M. M.	234
Garceau, B. J.	218
Geiringer, W.	224
Gentry, C. M.	179
Ghant, E. H.	175
Gleitz, H.	179
Godlove, I. H.	220
Goette, E. K.	245
Golden, B. C.	215
Gonsalves, V. E.	234
Gordon, J. T.	181
Grimmel, H. W.	223
Guerillot, P. J.	210
Gulati, A. N.	173
Haeberlin, G.	217
Happey, F.	172
Harrigan, C. H.	179
Harris, M.	243
Hartman, S. A.	231
Hassold, V. C.	198
Hatkin, L.	242
Haven, C. B.	243
Hazeldine, W. P.	240
Heaton, J.	196
Heckendorn, A.	225
Heckert, W. W.	186
Heintzelman, J. A.	220
Heliot, M. J.	207
Hemingway, J. J.	196
Henno, J.	173
Henriess, J.	238
Henry, P. S. H.	236
Hermans, P. H.	242
Higginbotham, R. S.	241
Hildebrand, V.	235
Hindle, W. H.	222
Hinkley, H. R.	208
Hitchen, H.	236
Hitt, I. V.	185
Hobourn, P. L.	187
Hoeber, H.	197
Holmes, H. H.	201, 205
Horigan, F. D.	228
Hundt, W.	216
Hunt, C. M.	244
Hutchinson, J. W.	197
Hutchison, R. D.	209
Iyer, V. G. R.	223
Jeckel, N. C.	187
Jellig, L.	203
Jerauld, F. C.	219
Jones, C. H.	186
Joy, W. H.	187
Junker, W. O.	178
Karrh, J. H.	173
Katz, S. M.	245
Keggin, J. F.	243
Keight, A. W.	181, 184
Kelley, M. J.	174
Kennedy, J. A.	183
Kenyon, W. O.	215
Kerr, K. W.	211
Key, G. E.	230
Kieley, M. F.	193, 198
Kindle, W. H.	223
Kinsella, E.	183
Kirschner, B.	172
Klein, J.	240
Kocsuta, M.	186
Kotteman, O. A.	193
Lambach, F.	188
Lancashire, J. B.	202
Lang, W. R.	171
Lanz, A.	195
Lawrie, L. G.	221
Lawson, R. H.	206, 209
LeBlanc, O. J.	200
LeCompte, G. C.	229
Lee, W. F.	178
Leupold, H. F.	174
Lindberg, J.	170
Lipson, M.	242
Lukens, A. F.	198
Lund, R. G.	171
Lustig, H. G.	201
McCutcheon, J. W.	218
McDonald, I. G.	236
McKinley, G. H.	208
MacKnight, H. A.	219
Makinson, K. R.	237
Manoog, J. C.	192
Marsden, K. E.	220, 226
Martin, D. M.	189
Martin, S., Jr.	217
Martindale, J. G.	175
Mhatre, S. H.	236
Michael, E.	194
Millard, F.	245
Miller, C. E.	179
Miller, G. H.	208
Miskovsky, A.	206
Miss, J.	192
Mitchell, J. A. B.	175
Moberg, I. O.	195
Moe, J. E.	192
Möller, J. A. L.	211
Mönch, R.	216
Moncrieff, R. W.	226
Mooney, M.	185
Morris, G.	243
Morton, W. E.	248
Nichols, E. C.	196
Norcross, G. F.	179
Nuessle, A. C.	230
Oeser, W.	179
Oesterlein, F.	225
Paddock, J. C.	174
Parkin, E. A.	234
Parriaud, L.	235
Parrott, F. G.	179
Partridge, H. W.	230
Payne, O. V.	192
Peberdy, R.	205
Pendergrass, J. H.	243
Perry, J. A.	217
Picard, L. J.	204
Picking, W. T.	212
Pickworth, C. L.	214
Pierret, M.	221
Pinte, le C.	173, 221
Platt, J. C.	217
Platt, M. M.	242
Pollitt, J.	191
Preston, J. M.	236
Ralston, O. C.	240
Reed, R. E.	214
Reich, E.	225
Reid, J. D.	171
Rinehart, C. D.	186
Robideau, J.	187
Rochas, M.	221
Rockoff, J.	179
Rogers, E.	232
Rogers, L. M.	194
Ross, T.	174
Roughsedge, R. H.	201
Runcie, W. O.	200
Ryan, J. F.	214
Sage, C. R.	228
Schedin, R. S.	200
Schroeder, G. M.	210
Schroeder, J. A.	227
Schwager, E.	219
Sen, M. K.	242
Sen Gupta, R.	233
Sepavich, V. F.	192
Seymour, G. W.	227, 231
Seymour, R. B.	210
Shortland, A.	207
Siegel, W.	188
Simon, F. T.	199
Slayter, G.	180
Slocombe, B. G. B.	189
Smith, B.	201
Solliday, R. E.	181
Southgate, B. A.	241
Speakman, J. B.	227
Speer, R. J.	229
Speight, F. Y., Jr.	230
Spooner, W. W.	230
Stahl, E. R.	181
Stallings, J. W.	231
Stein, H.	177
Stevenson, A. S.	227
Stibbe, E. V.	201, 208
Sullivan, F. J.	198
Tanguay, H. A.	202
Tatomer, H. N.	216
Taubert, C. F.	213
Teplitz, I.	192
Thomason, F. L.	178
Thyreen, P. I.	179
Todd, J. B.	236
Toone, R. N.	205
Underwood, G. J.	213
Unruh, C. C.	215
van der Hofstadt, J. G.	188
van der Noordaa, M. H.	208
van Nouhuys, J. R. H.	248
van Riper, J. C.	179
Vossen, E.	202
Wade, C. T.	223
Ward, G. C.	227, 231
Wawzonek, J.	201
Wedler, F. C.	212
Wendlik, J.	192
Welch, W. E. D.	185
Welti, E.	210
Wetzold, W. W.	179
Whewell, E.	227
Whewell, R.	194
Whitehead, A. E.	176
Whitin, H. A.	199
Williams, A. E.	228, 238
Williams, C. H.	182
Willis, C. A.	226
Wilson, D. L.	172
Winston, G.	234
Witts, H.	203
Woods, H. J.	176, 180
Wormell, R. L.	172
Wuttig, E.	191
Young, G. O.	206
Yuill, A. M.	243
Zeehuisen, J. J.	170
Zimic, M.	206

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